



## MULTILAYER CERAMIC CHIP CAPACITORS



### C Series General Application

Type: C0402 [EIA CC01005]  
C0603 [EIA CC0201]  
C1005 [EIA CC0402]  
C1608 [EIA CC0603]  
C2012 [EIA CC0805]  
C3216 [EIA CC1206]  
C3225 [EIA CC1210]  
C4532 [EIA CC1812]  
C5750 [EIA CC2220]

Issue date: April 2011



**TDK MLCC  
US Catalog**

Version B11

## REMINDERS

Please read before using this product

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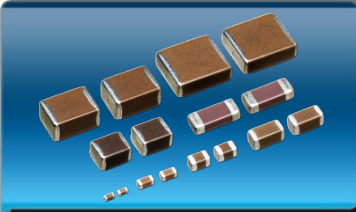
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## C Series General Application

Type: C0402, C0603, C1005, C1608,  
C2012, C3216, C3225, C4532, C5750



### Features



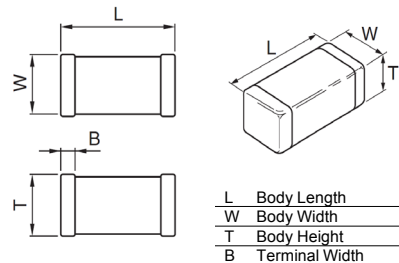
- High capacitance has been achieved through precision technologies that enable the use of multiple thinner ceramic dielectric layers.
- A monolithic structure ensures superior mechanical strength and reliability.
- High-accuracy automatic mounting is facilitated through the maintenance of very precise dimensional tolerances.
- Composed of only ceramics and metals, these capacitors provide extremely dependable performance, exhibiting virtually no degradation even when subjected to temperature extremes.
- Low stray capacitance ensures high conformity with nominal values, thereby simplifying the circuit design process.
- Low residual inductance assures superior frequency characteristics.
- Because electrostatic capacity has been obtained up to the electrolytic capacitor range, these capacitors offer long service life and are optimally suited for power supply designs that require high levels of reliability.
- Owing to their low ESR and excellent frequency characteristics, these products are optimally suited for high frequency and high-density type power supplies.

### Applications



- Electronics equipment
- Mobile communications equipment
- Office automation equipment
- Automotive electronics
- Test and measurement equipment
- Hybrid ICs, etc.
- Decoupling
- Smoothing
- Charge pump

### Shape & Dimensions



Dimensions in mm

|   |                |
|---|----------------|
| L | Body Length    |
| W | Body Width     |
| T | Body Height    |
| B | Terminal Width |

### Part Number Construction

Series Name **C 2012 X7R 1E 105 K T XXXX**

#### Dimensions L x W (mm)

| Case Code | Length      | Width       |
|-----------|-------------|-------------|
| C0402     | 0.40 ± 0.02 | 0.20 ± 0.02 |
| C0603     | 0.60 ± 0.03 | 0.30 ± 0.03 |
| C1005     | 1.00 ± 0.05 | 0.50 ± 0.05 |
| C1608     | 1.60 ± 0.10 | 0.80 ± 0.10 |
| C2012     | 2.00 ± 0.20 | 1.25 ± 0.20 |
| C3216     | 3.20 ± 0.20 | 1.60 ± 0.20 |
| C3225     | 3.20 ± 0.40 | 2.50 ± 0.30 |
| C4532     | 4.50 ± 0.40 | 3.20 ± 0.40 |
| C5750     | 5.70 ± 0.40 | 5.00 ± 0.40 |

#### Temperature Characteristic

| Temperature Characteristics | Capacitance Change | Temperature Range |
|-----------------------------|--------------------|-------------------|
| C0G                         | 0±30 ppm/°C        | -55 to +125°C     |
| SL                          | +350/-1000 ppm/°C  | -25 to +85°C      |
| X5R                         | ±15%               | -55 to +85°C      |
| X6S                         | +22%               | -55 to +105°C     |
| X7R                         | ±15%               | -55 to +125°C     |
| X7S                         | +22%               | -55 to +125°C     |
| Y5V                         | +22/-82%           | -33 to +85°C      |

#### Rated Voltage (DC)

| Voltage Code | Voltage (DC) | Voltage Code | Voltage (DC) | Voltage Code | Voltage (DC) |
|--------------|--------------|--------------|--------------|--------------|--------------|
| 0G           | 4V           | 1C           | 16V          | 1H           | 50V          |
| 0J           | 6.3V         | 1E           | 25V          |              |              |
| 1A           | 10V          | 1V           | 35V          |              |              |

#### Internal Codes

##### Packaging Style

| Packaging Code | Style       |
|----------------|-------------|
| T              | Tape & Reel |

##### Capacitance Tolerance

| Tolerance Code | Tolerance |
|----------------|-----------|
| W              | ± 0.05 pF |
| B              | ± 0.10 pF |
| C              | ± 0.25 pF |
| D              | ± 0.50 pF |
| E              | ± 0.20 pF |
| G              | ± 2%      |
| J              | ± 5%      |
| K              | ± 10%     |
| M              | ± 20%     |
| Z              | +80-20%   |

##### Nominal Capacitance (pF)

The capacitance is expressed in three digit codes and in units of pico Farads (pF). The first and second digits identify the first and second significant figures of the capacitance. The third digit identifies the multiplier. R designates a decimal point.

| Capacitance Code | Capacitance       |
|------------------|-------------------|
| 0R5              | 0.5pF             |
| 010              | 1pF               |
| 102              | 1,000pF (1nF)     |
| 105              | 1,000,000pF (1µF) |



## Capacitance Range Chart

## C0402 [EIA CC01005]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ )  
 Rated Voltage: 16V (1C)

| Capacitance (pF) | Cap Code | Tolerance              | C0G      |
|------------------|----------|------------------------|----------|
|                  |          |                        | 1C (16V) |
| 0.1              | 0R1      | W: $\pm 0.05\text{pF}$ |          |
| 0.2              | 0R2      | B: $\pm 0.10\text{pF}$ |          |
| 0.3              | 0R3      | C: $\pm 0.25\text{pF}$ |          |
| 0.4              | 0R4      | D: $\pm 0.50\text{pF}$ |          |
| 0.5              | 0R5      |                        |          |
| 0.6              | 0R6      |                        |          |
| 0.7              | 0R7      |                        |          |
| 0.8              | 0R8      |                        |          |
| 0.9              | 0R9      |                        |          |
| 1                | 010      |                        |          |
| 1.1              | 1R1      |                        |          |
| 1.2              | 1R2      |                        |          |
| 1.3              | 1R3      |                        |          |
| 1.5              | 1R5      |                        |          |
| 1.6              | 1R6      |                        |          |
| 1.8              | 1R8      |                        |          |
| 2                | 020      |                        |          |
| 2.2              | 2R2      |                        |          |
| 2.4              | 2R4      |                        |          |
| 2.7              | 2R7      |                        |          |
| 3                | 030      |                        |          |
| 3.3              | 3R3      |                        |          |
| 3.6              | 3R6      |                        |          |
| 3.9              | 3R9      |                        |          |
| 4.3              | 4R3      |                        |          |
| 4.7              | 4R7      |                        |          |
| 5.1              | 5R1      |                        |          |
| 5.6              | 5R6      |                        |          |
| 6.2              | 6R2      |                        |          |

| Capacitance (pF) | Cap Code | Tolerance              | C0G      |
|------------------|----------|------------------------|----------|
|                  |          |                        | 1C (16V) |
| 6.8              | 6R8      | B: $\pm 0.10\text{pF}$ |          |
| 7.5              | 7R5      | E: $\pm 0.20\text{pF}$ |          |
| 8.2              | 8R2      | C: $\pm 0.25\text{pF}$ |          |
| 9.1              | 9R1      | D: $\pm 0.50\text{pF}$ |          |
| 10               | 100      | G: $\pm 2\%$           |          |
| 11               | 110      | J: $\pm 5\%$           |          |
| 12               | 120      |                        |          |
| 13               | 130      |                        |          |
| 15               | 150      |                        |          |
| 16               | 160      |                        |          |
| 18               | 180      |                        |          |
| 20               | 200      |                        |          |
| 22               | 220      |                        |          |
| 24               | 240      |                        |          |
| 27               | 270      |                        |          |
| 30               | 300      |                        |          |
| 33               | 330      |                        |          |
| 36               | 360      |                        |          |
| 39               | 390      |                        |          |
| 43               | 430      |                        |          |
| 47               | 470      |                        |          |
| 51               | 510      |                        |          |
| 56               | 560      |                        |          |
| 62               | 620      |                        |          |
| 68               | 680      |                        |          |
| 75               | 750      |                        |          |
| 82               | 820      |                        |          |
| 91               | 910      |                        |          |
| 100              | 101      |                        |          |

• Standard capacitance is shown. Please refer to Capacitance Range Table for additional capacitance values.

### Capacitance Range Chart

Temperature Characteristics: X7R ( $\pm 15\%$ ), X5R ( $\pm 15\%$ )  
 Rated Voltage: 16V (1C), 10V (1A), 6.3V (0J)

| Capacitance (pF) | Cap Code | Tolerance     | X7R      |          | X5R      |           |
|------------------|----------|---------------|----------|----------|----------|-----------|
|                  |          |               | 1A (10V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 100              | 101      | K: $\pm 10\%$ |          |          |          |           |
| 150              | 151      |               |          |          |          |           |
| 220              | 221      |               |          |          |          |           |
| 330              | 331      |               |          |          |          |           |
| 470              | 471      |               |          |          |          |           |
| 680              | 681      |               |          |          |          |           |
| 1,000            | 102      |               |          |          |          |           |
| 1,500            | 152      |               |          |          |          |           |
| 2,200            | 222      |               |          |          |          |           |
| 3,300            | 332      |               |          |          |          |           |
| 4,700            | 472      |               |          |          |          |           |
| 6,800            | 682      |               |          |          |          |           |
| 10,000           | 103      |               |          |          |          |           |

Standard Thickness

0.20 mm



## Capacitance Range Table

## C0402 [EIA CC01005]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0402C0G1C0R2W                     | C0G                         | 16V           | 0.2              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R2B                     | C0G                         | 16V           | 0.2              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C0R3W                     | C0G                         | 16V           | 0.3              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R3B                     | C0G                         | 16V           | 0.3              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C0R4W                     | C0G                         | 16V           | 0.4              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R4B                     | C0G                         | 16V           | 0.4              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C0R5W                     | C0G                         | 16V           | 0.5              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R5C                     | C0G                         | 16V           | 0.5              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C0R5B                     | C0G                         | 16V           | 0.5              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C0R6W                     | C0G                         | 16V           | 0.6              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R6B                     | C0G                         | 16V           | 0.6              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C0R7W                     | C0G                         | 16V           | 0.7              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R7B                     | C0G                         | 16V           | 0.7              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C0R8W                     | C0G                         | 16V           | 0.8              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R8B                     | C0G                         | 16V           | 0.8              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C0R9W                     | C0G                         | 16V           | 0.9              | ± 0.05pF              | 0.20 ± 0.02    |
| C0402C0G1C0R9B                     | C0G                         | 16V           | 0.9              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C010B                     | C0G                         | 16V           | 1.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C010C                     | C0G                         | 16V           | 1.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C1R1B                     | C0G                         | 16V           | 1.1              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C1R1C                     | C0G                         | 16V           | 1.1              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C1R2B                     | C0G                         | 16V           | 1.2              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C1R2C                     | C0G                         | 16V           | 1.2              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C1R3B                     | C0G                         | 16V           | 1.3              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C1R3C                     | C0G                         | 16V           | 1.3              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C1R5B                     | C0G                         | 16V           | 1.5              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C1R5C                     | C0G                         | 16V           | 1.5              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C1R6B                     | C0G                         | 16V           | 1.6              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C1R6C                     | C0G                         | 16V           | 1.6              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C1R8B                     | C0G                         | 16V           | 1.8              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C1R8C                     | C0G                         | 16V           | 1.8              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C020B                     | C0G                         | 16V           | 2.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C020C                     | C0G                         | 16V           | 2.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C2R2B                     | C0G                         | 16V           | 2.2              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C2R2C                     | C0G                         | 16V           | 2.2              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C2R4B                     | C0G                         | 16V           | 2.4              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C2R4C                     | C0G                         | 16V           | 2.4              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C2R7B                     | C0G                         | 16V           | 2.7              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C2R7C                     | C0G                         | 16V           | 2.7              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C030B                     | C0G                         | 16V           | 3.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C030C                     | C0G                         | 16V           | 3.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C3R3B                     | C0G                         | 16V           | 3.3              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C3R3C                     | C0G                         | 16V           | 3.3              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C3R6B                     | C0G                         | 16V           | 3.6              | ± 0.10pF              | 0.20 ± 0.02    |



## Capacitance Range Table

## C0402 [EIA CC01005]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0402C0G1C3R6C                     | C0G                         | 16V           | 3.6              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C3R9B                     | C0G                         | 16V           | 3.9              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C3R9C                     | C0G                         | 16V           | 3.9              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C040B                     | C0G                         | 16V           | 4.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C040C                     | C0G                         | 16V           | 4.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C4R3B                     | C0G                         | 16V           | 4.3              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C4R3C                     | C0G                         | 16V           | 4.3              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C4R7B                     | C0G                         | 16V           | 4.7              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C4R7C                     | C0G                         | 16V           | 4.7              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C050B                     | C0G                         | 16V           | 5.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C050C                     | C0G                         | 16V           | 5.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C5R1B                     | C0G                         | 16V           | 5.1              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C5R1C                     | C0G                         | 16V           | 5.1              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C5R1D                     | C0G                         | 16V           | 5.1              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C5R6B                     | C0G                         | 16V           | 5.6              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C5R6C                     | C0G                         | 16V           | 5.6              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C5R6D                     | C0G                         | 16V           | 5.6              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C060B                     | C0G                         | 16V           | 6.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C060C                     | C0G                         | 16V           | 6.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C060D                     | C0G                         | 16V           | 6.0              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C6R2B                     | C0G                         | 16V           | 6.2              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C6R2C                     | C0G                         | 16V           | 6.2              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C6R2D                     | C0G                         | 16V           | 6.2              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C6R8B                     | C0G                         | 16V           | 6.8              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C6R8C                     | C0G                         | 16V           | 6.8              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C6R8D                     | C0G                         | 16V           | 6.8              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C070B                     | C0G                         | 16V           | 7.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C070C                     | C0G                         | 16V           | 7.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C070D                     | C0G                         | 16V           | 7.0              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C7R5B                     | C0G                         | 16V           | 7.5              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C7R5C                     | C0G                         | 16V           | 7.5              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C7R5D                     | C0G                         | 16V           | 7.5              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C080B                     | C0G                         | 16V           | 8.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C080C                     | C0G                         | 16V           | 8.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C080D                     | C0G                         | 16V           | 8.0              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C8R2B                     | C0G                         | 16V           | 8.2              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C8R2C                     | C0G                         | 16V           | 8.2              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C8R2D                     | C0G                         | 16V           | 8.2              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C090B                     | C0G                         | 16V           | 9.0              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C090C                     | C0G                         | 16V           | 9.0              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C090D                     | C0G                         | 16V           | 9.0              | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C9R1B                     | C0G                         | 16V           | 9.1              | ± 0.10pF              | 0.20 ± 0.02    |
| C0402C0G1C9R1C                     | C0G                         | 16V           | 9.1              | ± 0.25pF              | 0.20 ± 0.02    |
| C0402C0G1C9R1D                     | C0G                         | 16V           | 9.1              | ± 0.50pF              | 0.20 ± 0.02    |





## Capacitance Range Table

## C0402 [EIA CC01005]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0402C0G1C100E                     | C0G                         | 16V           | 10               | ± 0.20pF              | 0.20 ± 0.02    |
| C0402C0G1C100D                     | C0G                         | 16V           | 10               | ± 0.50pF              | 0.20 ± 0.02    |
| C0402C0G1C110G                     | C0G                         | 16V           | 11               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C110J                     | C0G                         | 16V           | 11               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C120G                     | C0G                         | 16V           | 12               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C120J                     | C0G                         | 16V           | 12               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C130G                     | C0G                         | 16V           | 13               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C130J                     | C0G                         | 16V           | 13               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C150G                     | C0G                         | 16V           | 15               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C150J                     | C0G                         | 16V           | 15               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C160G                     | C0G                         | 16V           | 16               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C160J                     | C0G                         | 16V           | 16               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C180G                     | C0G                         | 16V           | 18               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C180J                     | C0G                         | 16V           | 18               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C200G                     | C0G                         | 16V           | 20               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C200J                     | C0G                         | 16V           | 20               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C220G                     | C0G                         | 16V           | 22               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C220J                     | C0G                         | 16V           | 22               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C240G                     | C0G                         | 16V           | 24               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C240J                     | C0G                         | 16V           | 24               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C270G                     | C0G                         | 16V           | 27               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C270J                     | C0G                         | 16V           | 27               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C300G                     | C0G                         | 16V           | 30               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C300J                     | C0G                         | 16V           | 30               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C330G                     | C0G                         | 16V           | 33               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C330J                     | C0G                         | 16V           | 33               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C360G                     | C0G                         | 16V           | 36               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C360J                     | C0G                         | 16V           | 36               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C390G                     | C0G                         | 16V           | 39               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C390J                     | C0G                         | 16V           | 39               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C430G                     | C0G                         | 16V           | 43               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C430J                     | C0G                         | 16V           | 43               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C470G                     | C0G                         | 16V           | 47               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C470J                     | C0G                         | 16V           | 47               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C510G                     | C0G                         | 16V           | 51               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C510J                     | C0G                         | 16V           | 51               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C560G                     | C0G                         | 16V           | 56               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C560J                     | C0G                         | 16V           | 56               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C620G                     | C0G                         | 16V           | 62               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C620J                     | C0G                         | 16V           | 62               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C680G                     | C0G                         | 16V           | 68               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C680J                     | C0G                         | 16V           | 68               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C750G                     | C0G                         | 16V           | 75               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C750J                     | C0G                         | 16V           | 75               | ± 5%                  | 0.20 ± 0.02    |



## Capacitance Range Table

## C0402 [EIA CC01005]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0402C0G1C820G                  | C0G                         | 16V           | 82               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C820J                  | C0G                         | 16V           | 82               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C910G                  | C0G                         | 16V           | 91               | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C910J                  | C0G                         | 16V           | 91               | ± 5%                  | 0.20 ± 0.02    |
| C0402C0G1C101G                  | C0G                         | 16V           | 100              | ± 2%                  | 0.20 ± 0.02    |
| C0402C0G1C101J                  | C0G                         | 16V           | 100              | ± 5%                  | 0.20 ± 0.02    |

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X5R (-55 to +85°C, ±15%)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0402X7R1A101K                  | X7R                         | 10V           | 100              | ± 10%                 | 0.20 ± 0.02    |
| C0402X7R1A151K                  | X7R                         | 10V           | 150              | ± 10%                 | 0.20 ± 0.02    |
| C0402X7R1A221K                  | X7R                         | 10V           | 220              | ± 10%                 | 0.20 ± 0.02    |
| C0402X7R1A331K                  | X7R                         | 10V           | 330              | ± 10%                 | 0.20 ± 0.02    |
| C0402X7R1A471K                  | X7R                         | 10V           | 470              | ± 10%                 | 0.20 ± 0.02    |
| C0402X7R1A681K                  | X7R                         | 10V           | 680              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1C101K                  | X5R                         | 16V           | 100              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1C151K                  | X5R                         | 16V           | 150              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1C221K                  | X5R                         | 16V           | 220              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1C331K                  | X5R                         | 16V           | 330              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1C471K                  | X5R                         | 16V           | 470              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1C681K                  | X5R                         | 16V           | 680              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1A101K                  | X5R                         | 10V           | 100              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1A221K                  | X5R                         | 10V           | 220              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1A471K                  | X5R                         | 10V           | 470              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1A102K                  | X5R                         | 10V           | 1,000            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1A152K                  | X5R                         | 10V           | 1,500            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R1A222K                  | X5R                         | 10V           | 2,200            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J681K                  | X5R                         | 6.3V          | 680              | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J102K                  | X5R                         | 6.3V          | 1,000            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J152K                  | X5R                         | 6.3V          | 1,500            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J222K                  | X5R                         | 6.3V          | 2,200            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J332K                  | X5R                         | 6.3V          | 3,300            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J472K                  | X5R                         | 6.3V          | 4,700            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J682K                  | X5R                         | 6.3V          | 6,800            | ± 10%                 | 0.20 ± 0.02    |
| C0402X5R0J103K                  | X5R                         | 6.3V          | 10,000           | ± 10%                 | 0.20 ± 0.02    |





## Capacitance Range Chart

## C0603 [EIA CC0201]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ )  
 Rated Voltage: 50V (1H), 25V (1E)

| Capacitance (pF) | Cap Code | Tolerance              | C0G      |          | Capacitance (pF) | Cap Code | Tolerance              | C0G      |          |
|------------------|----------|------------------------|----------|----------|------------------|----------|------------------------|----------|----------|
|                  |          |                        | 1H (50V) | 1E (25V) |                  |          |                        | 1H (50V) | 1E (25V) |
| 0.2              | 0R2      | W: $\pm 0.05\text{pF}$ |          |          | 6.8              | 6R8      | B: $\pm 0.10\text{pF}$ |          |          |
| 0.3              | 0R3      | B: $\pm 0.10\text{pF}$ |          |          | 7.5              | 7R5      | E: $\pm 0.20\text{pF}$ |          |          |
| 0.4              | 0R4      | C: $\pm 0.25\text{pF}$ |          |          | 8.2              | 8R2      | C: $\pm 0.25\text{pF}$ |          |          |
| 0.5              | 0R5      | D: $\pm 0.50\text{pF}$ |          |          | 9.1              | 9R1      | D: $\pm 0.50\text{pF}$ |          |          |
| 0.6              | 0R6      |                        |          |          | 10               | 100      | G: $\pm 2\%$           |          |          |
| 0.7              | 0R7      |                        |          |          | 11               | 110      | J: $\pm 5\%$           |          |          |
| 0.75             | R75      |                        |          |          | 12               | 120      |                        |          |          |
| 0.8              | 0R8      |                        |          |          | 13               | 130      |                        |          |          |
| 0.9              | 0R9      |                        |          |          | 15               | 150      |                        |          |          |
| 1                | 010      |                        |          |          | 16               | 160      |                        |          |          |
| 1.1              | 1R1      |                        |          |          | 18               | 180      |                        |          |          |
| 1.2              | 1R2      |                        |          |          | 20               | 200      |                        |          |          |
| 1.3              | 1R3      |                        |          |          | 22               | 220      |                        |          |          |
| 1.5              | 1R5      |                        |          |          | 24               | 240      |                        |          |          |
| 1.6              | 1R6      |                        |          |          | 27               | 270      |                        |          |          |
| 1.8              | 1R8      |                        |          |          | 30               | 300      |                        |          |          |
| 2                | 020      |                        |          |          | 33               | 330      |                        |          |          |
| 2.2              | 2R2      |                        |          |          | 36               | 360      |                        |          |          |
| 2.4              | 2R4      |                        |          |          | 39               | 390      |                        |          |          |
| 2.7              | 2R7      |                        |          |          | 43               | 430      |                        |          |          |
| 3                | 030      |                        |          |          | 47               | 470      |                        |          |          |
| 3.3              | 3R3      |                        |          |          | 51               | 510      |                        |          |          |
| 3.6              | 3R6      |                        |          |          | 56               | 560      |                        |          |          |
| 3.9              | 3R9      |                        |          |          | 62               | 620      |                        |          |          |
| 4.3              | 4R3      |                        |          |          | 68               | 680      |                        |          |          |
| 4.7              | 4R7      |                        |          |          | 75               | 750      |                        |          |          |
| 5.1              | 5R1      |                        |          |          | 82               | 820      |                        |          |          |
| 5.6              | 5R6      |                        |          |          | 91               | 910      |                        |          |          |
| 6.2              | 6R2      |                        |          |          | 100              | 101      |                        |          |          |

Standard Thickness  
 0.30 mm

• Standard capacitance is shown. Please refer to Capacitance Range Table for additional capacitance values.



## Capacitance Range Chart

## C0603 [EIA CC0201]

### Capacitance Range Chart

Temperature Characteristics: X7R ( $\pm 15\%$ ), X5R ( $\pm 15\%$ )

Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

| Capacitance (pF) | Cap Code | Tolerance                      | X7R      |          |          |          |           | X5R      |          |          |          |           |
|------------------|----------|--------------------------------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|-----------|
|                  |          |                                | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 100              | 101      | K: $\pm 10\%$<br>M: $\pm 20\%$ | █        | █        | █        |          |           | █        | █        |          |          |           |
| 150              | 151      |                                |          |          |          |          |           |          |          |          |          |           |
| 220              | 221      |                                |          |          |          |          |           |          |          |          |          |           |
| 330              | 331      |                                |          |          |          |          |           |          |          |          |          |           |
| 470              | 471      |                                | █        |          |          |          |           | █        |          |          |          |           |
| 680              | 681      |                                |          | █        | █        |          |           |          | █        |          |          |           |
| 1,000            | 102      |                                |          |          |          |          |           |          |          |          |          |           |
| 1,500            | 152      |                                |          |          |          |          |           |          |          |          |          |           |
| 2,200            | 222      |                                |          | █        | █        |          |           |          |          | █        |          |           |
| 3,300            | 332      |                                |          |          |          |          |           |          |          |          |          |           |
| 4,700            | 472      |                                |          |          | █        |          |           |          |          | █        |          |           |
| 6,800            | 682      |                                |          |          |          |          |           |          |          |          |          |           |
| 10,000           | 103      |                                |          |          |          |          | █         |          |          | █        |          |           |
| 15,000           | 153      |                                |          |          |          |          | █         |          |          |          |          |           |
| 22,000           | 223      |                                |          |          |          |          |           |          |          |          |          |           |
| 33,000           | 333      |                                |          |          |          |          |           |          |          |          |          |           |
| 47,000           | 473      |                                |          |          |          |          |           |          |          |          |          |           |
| 68,000           | 683      |                                |          |          |          |          |           |          |          |          |          |           |
| 100,000          | 104      |                                |          |          |          |          |           |          |          | █        | █        |           |
| 150,000          | 154      |                                |          |          |          |          |           |          |          |          |          | █         |
| 220,000          | 224      |                                |          |          |          |          |           |          |          |          |          | █         |

• Standard capacitance is shown. Please refer to Capacitance Range Table for additional capacitance values.

Standard Thickness

█ 0.30 mm



## Capacitance Range Table

## C0603 [EIA CC0201]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603C0G1H0R5B                     | C0G                         | 50V           | 0.5              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H0R5C                     | C0G                         | 50V           | 0.5              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H010B                     | C0G                         | 50V           | 1.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H010C                     | C0G                         | 50V           | 1.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H1R2C                     | C0G                         | 50V           | 1.2              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H1R5B                     | C0G                         | 50V           | 1.5              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H1R5C                     | C0G                         | 50V           | 1.5              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H1R8C                     | C0G                         | 50V           | 1.8              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H020B                     | C0G                         | 50V           | 2.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H020C                     | C0G                         | 50V           | 2.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H2R2B                     | C0G                         | 50V           | 2.2              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H2R2C                     | C0G                         | 50V           | 2.2              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H2R7C                     | C0G                         | 50V           | 2.7              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H030B                     | C0G                         | 50V           | 3.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H030C                     | C0G                         | 50V           | 3.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H3R3B                     | C0G                         | 50V           | 3.3              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H3R3C                     | C0G                         | 50V           | 3.3              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H3R9C                     | C0G                         | 50V           | 3.9              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H040B                     | C0G                         | 50V           | 4.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H040C                     | C0G                         | 50V           | 4.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H4R7B                     | C0G                         | 50V           | 4.7              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H4R7C                     | C0G                         | 50V           | 4.7              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H050B                     | C0G                         | 50V           | 5.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1H050C                     | C0G                         | 50V           | 5.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H5R6C                     | C0G                         | 50V           | 5.6              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H060C                     | C0G                         | 50V           | 6.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H060D                     | C0G                         | 50V           | 6.0              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1H6R8C                     | C0G                         | 50V           | 6.8              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H6R8D                     | C0G                         | 50V           | 6.8              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1H070C                     | C0G                         | 50V           | 7.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H070D                     | C0G                         | 50V           | 7.0              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1H080C                     | C0G                         | 50V           | 8.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H080D                     | C0G                         | 50V           | 8.0              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1H8R2C                     | C0G                         | 50V           | 8.2              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H090C                     | C0G                         | 50V           | 9.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H090D                     | C0G                         | 50V           | 9.0              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1H100C                     | C0G                         | 50V           | 10               | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1H100D                     | C0G                         | 50V           | 10               | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1H110J                     | C0G                         | 50V           | 11               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H120J                     | C0G                         | 50V           | 12               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H130J                     | C0G                         | 50V           | 13               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H150J                     | C0G                         | 50V           | 15               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H160J                     | C0G                         | 50V           | 16               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H180J                     | C0G                         | 50V           | 18               | ± 5%                  | 0.30 ± 0.03    |



## Capacitance Range Table

## C0603 [EIA CC0201]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603C0G1H200J                     | C0G                         | 50V           | 20               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H220J                     | C0G                         | 50V           | 22               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H240J                     | C0G                         | 50V           | 24               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H270J                     | C0G                         | 50V           | 27               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H300J                     | C0G                         | 50V           | 30               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H330J                     | C0G                         | 50V           | 33               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H360J                     | C0G                         | 50V           | 36               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H390J                     | C0G                         | 50V           | 39               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H430J                     | C0G                         | 50V           | 43               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H470J                     | C0G                         | 50V           | 47               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H510J                     | C0G                         | 50V           | 51               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H560J                     | C0G                         | 50V           | 56               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H620J                     | C0G                         | 50V           | 62               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H680J                     | C0G                         | 50V           | 68               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H750J                     | C0G                         | 50V           | 75               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H820J                     | C0G                         | 50V           | 82               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H910J                     | C0G                         | 50V           | 91               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1H101J                     | C0G                         | 50V           | 100              | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E0R2W                     | C0G                         | 25V           | 0.2              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R2B                     | C0G                         | 25V           | 0.2              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E0R3W                     | C0G                         | 25V           | 0.3              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R3B                     | C0G                         | 25V           | 0.3              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E0R4W                     | C0G                         | 25V           | 0.4              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R4B                     | C0G                         | 25V           | 0.4              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E0R5W                     | C0G                         | 25V           | 0.5              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R5C                     | C0G                         | 25V           | 0.5              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E0R5B                     | C0G                         | 25V           | 0.5              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E0R6W                     | C0G                         | 25V           | 0.6              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R6B                     | C0G                         | 25V           | 0.6              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E0R7W                     | C0G                         | 25V           | 0.7              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R7B                     | C0G                         | 25V           | 0.7              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1ER75B                     | C0G                         | 25V           | 0.75             | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1ER75C                     | C0G                         | 25V           | 0.75             | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E0R8W                     | C0G                         | 25V           | 0.8              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R8B                     | C0G                         | 25V           | 0.8              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E0R9W                     | C0G                         | 25V           | 0.9              | ± 0.05pF              | 0.30 ± 0.03    |
| C0603C0G1E0R9B                     | C0G                         | 25V           | 0.9              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E010B                     | C0G                         | 25V           | 1.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E010C                     | C0G                         | 25V           | 1.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E1R1B                     | C0G                         | 25V           | 1.1              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E1R1C                     | C0G                         | 25V           | 1.1              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E1R2B                     | C0G                         | 25V           | 1.2              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E1R2C                     | C0G                         | 25V           | 1.2              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E1R3B                     | C0G                         | 25V           | 1.3              | ± 0.10pF              | 0.30 ± 0.03    |

## C0603 [EIA CC0201]



### Capacitance Range Table

#### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature<br>Characteristics | Rated<br>Voltage | Capacitance<br>(pF) | Capacitance<br>Tolerance | Thickness<br>(mm) |
|------------------------------------|--------------------------------|------------------|---------------------|--------------------------|-------------------|
| C0603C0G1E1R3C                     | C0G                            | 25V              | 1.3                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E1R5B                     | C0G                            | 25V              | 1.5                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E1R5C                     | C0G                            | 25V              | 1.5                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E1R6B                     | C0G                            | 25V              | 1.6                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E1R6C                     | C0G                            | 25V              | 1.6                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E1R8B                     | C0G                            | 25V              | 1.8                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E1R8C                     | C0G                            | 25V              | 1.8                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E020B                     | C0G                            | 25V              | 2.0                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E020C                     | C0G                            | 25V              | 2.0                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E2R2B                     | C0G                            | 25V              | 2.2                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E2R2C                     | C0G                            | 25V              | 2.2                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E2R4B                     | C0G                            | 25V              | 2.4                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E2R4C                     | C0G                            | 25V              | 2.4                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E2R7B                     | C0G                            | 25V              | 2.7                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E2R7C                     | C0G                            | 25V              | 2.7                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E030B                     | C0G                            | 25V              | 3.0                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E030C                     | C0G                            | 25V              | 3.0                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E3R3B                     | C0G                            | 25V              | 3.3                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E3R3C                     | C0G                            | 25V              | 3.3                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E3R6B                     | C0G                            | 25V              | 3.6                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E3R6C                     | C0G                            | 25V              | 3.6                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E3R9B                     | C0G                            | 25V              | 3.9                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E3R9C                     | C0G                            | 25V              | 3.9                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E040B                     | C0G                            | 25V              | 4.0                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E040C                     | C0G                            | 25V              | 4.0                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E4R3B                     | C0G                            | 25V              | 4.3                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E4R3C                     | C0G                            | 25V              | 4.3                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E4R7B                     | C0G                            | 25V              | 4.7                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E4R7C                     | C0G                            | 25V              | 4.7                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E050B                     | C0G                            | 25V              | 5.0                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E050C                     | C0G                            | 25V              | 5.0                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E5R1B                     | C0G                            | 25V              | 5.1                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E5R1C                     | C0G                            | 25V              | 5.1                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E5R1D                     | C0G                            | 25V              | 5.1                 | ± 0.50pF                 | 0.30 ± 0.03       |
| C0603C0G1E5R6B                     | C0G                            | 25V              | 5.6                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E5R6C                     | C0G                            | 25V              | 5.6                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E5R6D                     | C0G                            | 25V              | 5.6                 | ± 0.50pF                 | 0.30 ± 0.03       |
| C0603C0G1E060B                     | C0G                            | 25V              | 6.0                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E060C                     | C0G                            | 25V              | 6.0                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E060D                     | C0G                            | 25V              | 6.0                 | ± 0.50pF                 | 0.30 ± 0.03       |
| C0603C0G1E6R2B                     | C0G                            | 25V              | 6.2                 | ± 0.10pF                 | 0.30 ± 0.03       |
| C0603C0G1E6R2C                     | C0G                            | 25V              | 6.2                 | ± 0.25pF                 | 0.30 ± 0.03       |
| C0603C0G1E6R2D                     | C0G                            | 25V              | 6.2                 | ± 0.50pF                 | 0.30 ± 0.03       |
| C0603C0G1E6R8B                     | C0G                            | 25V              | 6.8                 | ± 0.10pF                 | 0.30 ± 0.03       |



## Capacitance Range Table

## C0603 [EIA CC0201]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603C0G1E6R8C                     | C0G                         | 25V           | 6.8              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E6R8D                     | C0G                         | 25V           | 6.8              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E070B                     | C0G                         | 25V           | 7.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E070C                     | C0G                         | 25V           | 7.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E070D                     | C0G                         | 25V           | 7.0              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E7R5B                     | C0G                         | 25V           | 7.5              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E7R5C                     | C0G                         | 25V           | 7.5              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E7R5D                     | C0G                         | 25V           | 7.5              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E080B                     | C0G                         | 25V           | 8.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E080C                     | C0G                         | 25V           | 8.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E080D                     | C0G                         | 25V           | 8.0              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E8R2B                     | C0G                         | 25V           | 8.2              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E8R2C                     | C0G                         | 25V           | 8.2              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E8R2D                     | C0G                         | 25V           | 8.2              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E090B                     | C0G                         | 25V           | 9.0              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E090C                     | C0G                         | 25V           | 9.0              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E090D                     | C0G                         | 25V           | 9.0              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E9R1B                     | C0G                         | 25V           | 9.1              | ± 0.10pF              | 0.30 ± 0.03    |
| C0603C0G1E9R1C                     | C0G                         | 25V           | 9.1              | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E9R1D                     | C0G                         | 25V           | 9.1              | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E100E                     | C0G                         | 25V           | 10               | ± 0.20pF              | 0.30 ± 0.03    |
| C0603C0G1E100C                     | C0G                         | 25V           | 10               | ± 0.25pF              | 0.30 ± 0.03    |
| C0603C0G1E100D                     | C0G                         | 25V           | 10               | ± 0.50pF              | 0.30 ± 0.03    |
| C0603C0G1E110G                     | C0G                         | 25V           | 11               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E110J                     | C0G                         | 25V           | 11               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E120G                     | C0G                         | 25V           | 12               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E120J                     | C0G                         | 25V           | 12               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E130G                     | C0G                         | 25V           | 13               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E130J                     | C0G                         | 25V           | 13               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E150G                     | C0G                         | 25V           | 15               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E150J                     | C0G                         | 25V           | 15               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E160G                     | C0G                         | 25V           | 16               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E160J                     | C0G                         | 25V           | 16               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E180G                     | C0G                         | 25V           | 18               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E180J                     | C0G                         | 25V           | 18               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E200G                     | C0G                         | 25V           | 20               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E200J                     | C0G                         | 25V           | 20               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E220G                     | C0G                         | 25V           | 22               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E220J                     | C0G                         | 25V           | 22               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E240G                     | C0G                         | 25V           | 24               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E240J                     | C0G                         | 25V           | 24               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E270G                     | C0G                         | 25V           | 27               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E270J                     | C0G                         | 25V           | 27               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E300G                     | C0G                         | 25V           | 30               | ± 2%                  | 0.30 ± 0.03    |





## Capacitance Range Table

## C0603 [EIA CC0201]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603C0G1E300J                  | C0G                         | 25V           | 30               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E330G                  | C0G                         | 25V           | 33               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E330J                  | C0G                         | 25V           | 33               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E360G                  | C0G                         | 25V           | 36               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E360J                  | C0G                         | 25V           | 36               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E390G                  | C0G                         | 25V           | 39               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E390J                  | C0G                         | 25V           | 39               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E430G                  | C0G                         | 25V           | 43               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E430J                  | C0G                         | 25V           | 43               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E470G                  | C0G                         | 25V           | 47               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E470J                  | C0G                         | 25V           | 47               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E510G                  | C0G                         | 25V           | 51               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E510J                  | C0G                         | 25V           | 51               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E560G                  | C0G                         | 25V           | 56               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E560J                  | C0G                         | 25V           | 56               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E620G                  | C0G                         | 25V           | 62               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E620J                  | C0G                         | 25V           | 62               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E680G                  | C0G                         | 25V           | 68               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E680J                  | C0G                         | 25V           | 68               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E750G                  | C0G                         | 25V           | 75               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E750J                  | C0G                         | 25V           | 75               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E820G                  | C0G                         | 25V           | 82               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E820J                  | C0G                         | 25V           | 82               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E910G                  | C0G                         | 25V           | 91               | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E910J                  | C0G                         | 25V           | 91               | ± 5%                  | 0.30 ± 0.03    |
| C0603C0G1E101G                  | C0G                         | 25V           | 100              | ± 2%                  | 0.30 ± 0.03    |
| C0603C0G1E101J                  | C0G                         | 25V           | 100              | ± 5%                  | 0.30 ± 0.03    |

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603X7R1H101K                  | X7R                         | 50V           | 100              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1H101M                  | X7R                         | 50V           | 100              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1H151K                  | X7R                         | 50V           | 150              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1H151M                  | X7R                         | 50V           | 150              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1H221K                  | X7R                         | 50V           | 220              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1H221M                  | X7R                         | 50V           | 220              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1H331K                  | X7R                         | 50V           | 330              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1H331M                  | X7R                         | 50V           | 330              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1H471K                  | X7R                         | 50V           | 470              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1H471M                  | X7R                         | 50V           | 470              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E101K                  | X7R                         | 25V           | 100              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E101M                  | X7R                         | 25V           | 100              | ± 20%                 | 0.30 ± 0.03    |



## Capacitance Range Table

## C0603 [EIA CC0201]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603X7R1E151K                     | X7R                         | 25V           | 150              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E151M                     | X7R                         | 25V           | 150              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E221K                     | X7R                         | 25V           | 220              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E221M                     | X7R                         | 25V           | 220              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E331K                     | X7R                         | 25V           | 330              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E331M                     | X7R                         | 25V           | 330              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E471K                     | X7R                         | 25V           | 470              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E471M                     | X7R                         | 25V           | 470              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E681K                     | X7R                         | 25V           | 680              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E681M                     | X7R                         | 25V           | 680              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E102K                     | X7R                         | 25V           | 1,000            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E102M                     | X7R                         | 25V           | 1,000            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E152K                     | X7R                         | 25V           | 1,500            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E152M                     | X7R                         | 25V           | 1,500            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E222K                     | X7R                         | 25V           | 2,200            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E222M                     | X7R                         | 25V           | 2,200            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1E332K                     | X7R                         | 25V           | 3,300            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1E332M                     | X7R                         | 25V           | 3,300            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C101K                     | X7R                         | 16V           | 100              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C101M                     | X7R                         | 16V           | 100              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C151K                     | X7R                         | 16V           | 150              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C151M                     | X7R                         | 16V           | 150              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C221K                     | X7R                         | 16V           | 220              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C221M                     | X7R                         | 16V           | 220              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C331K                     | X7R                         | 16V           | 330              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C331M                     | X7R                         | 16V           | 330              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C471K                     | X7R                         | 16V           | 470              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C471M                     | X7R                         | 16V           | 470              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C681K                     | X7R                         | 16V           | 680              | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C681M                     | X7R                         | 16V           | 680              | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C102K                     | X7R                         | 16V           | 1,000            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C102M                     | X7R                         | 16V           | 1,000            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C152K                     | X7R                         | 16V           | 1,500            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C152M                     | X7R                         | 16V           | 1,500            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C222K                     | X7R                         | 16V           | 2,200            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C222M                     | X7R                         | 16V           | 2,200            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C332K                     | X7R                         | 16V           | 3,300            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C332M                     | X7R                         | 16V           | 3,300            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1C472K                     | X7R                         | 16V           | 4,700            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1C472M                     | X7R                         | 16V           | 4,700            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1A682K                     | X7R                         | 10V           | 6,800            | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1A682M                     | X7R                         | 10V           | 6,800            | ± 20%                 | 0.30 ± 0.03    |
| C0603X7R1A103K                     | X7R                         | 10V           | 10,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R1A103M                     | X7R                         | 10V           | 10,000           | ± 20%                 | 0.30 ± 0.03    |



## Capacitance Range Table

## C0603 [EIA CC0201]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X6S(-55 to 105°C, ±22%), X5R (-55 to +85°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603X7R0J103K                     | X7R                         | 6.3V          | 10,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X7R0J103M                     | X7R                         | 6.3V          | 10,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X6S0G104K                     | X6S                         | 4V            | 100,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X6S0G104M                     | X6S                         | 4V            | 100,000          | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1H101K                     | X5R                         | 50V           | 100              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1H101M                     | X5R                         | 50V           | 100              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1H151K                     | X5R                         | 50V           | 150              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1H151M                     | X5R                         | 50V           | 150              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1H221K                     | X5R                         | 50V           | 220              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1H221M                     | X5R                         | 50V           | 220              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1H331K                     | X5R                         | 50V           | 330              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1H331M                     | X5R                         | 50V           | 330              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1H471K                     | X5R                         | 50V           | 470              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1H471M                     | X5R                         | 50V           | 470              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E101K                     | X5R                         | 25V           | 100              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E101M                     | X5R                         | 25V           | 100              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E151K                     | X5R                         | 25V           | 150              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E151M                     | X5R                         | 25V           | 150              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E221K                     | X5R                         | 25V           | 220              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E221M                     | X5R                         | 25V           | 220              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E331K                     | X5R                         | 25V           | 330              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E331M                     | X5R                         | 25V           | 330              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E471K                     | X5R                         | 25V           | 470              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E471M                     | X5R                         | 25V           | 470              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E681K                     | X5R                         | 25V           | 680              | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E681M                     | X5R                         | 25V           | 680              | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E102K                     | X5R                         | 25V           | 1,000            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E102M                     | X5R                         | 25V           | 1,000            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E152K                     | X5R                         | 25V           | 1,500            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E152M                     | X5R                         | 25V           | 1,500            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E222K                     | X5R                         | 25V           | 2,200            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E222M                     | X5R                         | 25V           | 2,200            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1E332K                     | X5R                         | 25V           | 3,300            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1E332M                     | X5R                         | 25V           | 3,300            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1C222K                     | X5R                         | 16V           | 2,200            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1C222M                     | X5R                         | 16V           | 2,200            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1C332K                     | X5R                         | 16V           | 3,300            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1C332M                     | X5R                         | 16V           | 3,300            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1C472K                     | X5R                         | 16V           | 4,700            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1C472M                     | X5R                         | 16V           | 4,700            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1C104K                     | X5R                         | 16V           | 100,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1C154K                     | X5R                         | 16V           | 150,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1C224K                     | X5R                         | 16V           | 220,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1C224M                     | X5R                         | 16V           | 220,000          | ± 20%                 | 0.30 ± 0.03    |



## Capacitance Range Table

## C0603 [EIA CC0201]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%), Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C0603X5R1A682K                     | X5R                         | 10V           | 6,800            | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1A682M                     | X5R                         | 10V           | 6,800            | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1A103K                     | X5R                         | 10V           | 10,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1A103M                     | X5R                         | 10V           | 10,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R1A104K                     | X5R                         | 10V           | 100,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1A154K                     | X5R                         | 10V           | 150,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1A224K                     | X5R                         | 10V           | 220,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R1A224M                     | X5R                         | 10V           | 220,000          | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J103K                     | X5R                         | 6.3V          | 10,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J103M                     | X5R                         | 6.3V          | 10,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J153K                     | X5R                         | 6.3V          | 15,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J153M                     | X5R                         | 6.3V          | 15,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J223K                     | X5R                         | 6.3V          | 22,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J223M                     | X5R                         | 6.3V          | 22,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J333K                     | X5R                         | 6.3V          | 33,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J333M                     | X5R                         | 6.3V          | 33,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J473K                     | X5R                         | 6.3V          | 47,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J473M                     | X5R                         | 6.3V          | 47,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J683K                     | X5R                         | 6.3V          | 68,000           | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J683M                     | X5R                         | 6.3V          | 68,000           | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J104K                     | X5R                         | 6.3V          | 100,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J104M                     | X5R                         | 6.3V          | 100,000          | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J154K                     | X5R                         | 6.3V          | 150,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J154M                     | X5R                         | 6.3V          | 150,000          | ± 20%                 | 0.30 ± 0.03    |
| C0603X5R0J224K                     | X5R                         | 6.3V          | 220,000          | ± 10%                 | 0.30 ± 0.03    |
| C0603X5R0J224M                     | X5R                         | 6.3V          | 220,000          | ± 20%                 | 0.30 ± 0.03    |
| C0603Y5V1C103Z                     | Y5V                         | 16V           | 10,000           | +80/-20%              | 0.30 ± 0.03    |



## Capacitance Range Chart

## C1005 [EIA CC0402]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ )  
 Rated Voltage: 50V (1H), 25V (1E)

| Capacitance (pF) | Cap Code | Tolerance                                                                  | C0G      |          | Capacitance (pF) | Cap Code | Tolerance    | C0G      |          |  |  |
|------------------|----------|----------------------------------------------------------------------------|----------|----------|------------------|----------|--------------|----------|----------|--|--|
|                  |          |                                                                            | 1H (50V) | 1E (25V) |                  |          |              | 1H (50V) | 1E (25V) |  |  |
| 0.1              | 0R1      | B: $\pm 0.10\text{pF}$<br>C: $\pm 0.25\text{pF}$<br>D: $\pm 0.50\text{pF}$ | █        |          | 30               | 300      | J: $\pm 5\%$ | █        |          |  |  |
| 0.5              | 0R5      |                                                                            |          |          |                  | 33       |              |          | 330      |  |  |
| 0.75             | R75      |                                                                            |          |          |                  | 36       |              |          | 360      |  |  |
| 1                | 010      |                                                                            |          |          |                  | 39       |              |          | 390      |  |  |
| 1.2              | 1R2      |                                                                            |          |          |                  | 43       |              |          | 430      |  |  |
| 1.5              | 1R5      |                                                                            |          |          |                  | 47       |              |          | 470      |  |  |
| 1.8              | 1R8      |                                                                            |          |          |                  | 51       |              |          | 510      |  |  |
| 2.2              | 2R2      |                                                                            |          |          |                  | 56       |              |          | 560      |  |  |
| 2.7              | 2R7      |                                                                            |          |          |                  | 62       |              |          | 620      |  |  |
| 3.3              | 3R3      |                                                                            |          |          |                  | 68       |              |          | 680      |  |  |
| 3.9              | 3R9      |                                                                            |          | 75       | 750              |          |              |          |          |  |  |
| 4.7              | 4R7      |                                                                            |          | 82       | 820              |          |              |          |          |  |  |
| 5.6              | 5R6      | C: $\pm 0.25\text{pF}$<br>D: $\pm 0.50\text{pF}$                           | █        |          | 91               | 910      |              |          |          |  |  |
| 6.8              | 6R8      |                                                                            |          |          |                  | 100      | 101          |          |          |  |  |
| 8.2              | 8R2      |                                                                            |          |          |                  | 120      | 121          |          |          |  |  |
| 10               | 100      | J: $\pm 5\%$                                                               | █        |          | 150              | 151      |              |          |          |  |  |
| 11               | 110      |                                                                            |          |          |                  | 180      | 181          |          |          |  |  |
| 12               | 120      |                                                                            |          |          |                  | 220      | 221          |          |          |  |  |
| 13               | 130      |                                                                            |          |          |                  | 270      | 271          |          |          |  |  |
| 15               | 150      |                                                                            |          |          |                  | 330      | 331          |          |          |  |  |
| 16               | 160      |                                                                            |          |          |                  | 390      | 391          |          |          |  |  |
| 18               | 180      |                                                                            |          |          |                  | 470      | 471          |          |          |  |  |
| 20               | 200      |                                                                            |          |          |                  | 560      | 561          |          | █        |  |  |
| 22               | 220      |                                                                            |          |          |                  | 680      | 681          |          |          |  |  |
| 24               | 240      |                                                                            |          |          |                  | 820      | 821          |          |          |  |  |
| 27               | 270      |                                                                            |          | 1,000    | 102              |          |              |          |          |  |  |

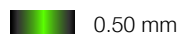
• Standard capacitance is shown. Please refer to Capacitance Range Table for additional capacitance values.

### Capacitance Range Chart

Temperature Characteristics: X7R ( $\pm 15\%$ )  
 Rated Voltage: 50V (1H), 35V (1V), 25V (1E), 16V(1C), 10V (1A)

| Capacitance (pF) | Cap Code | Tolerance                      | X7R      |          |          |          |          |  |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|--|
|                  |          |                                | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) |  |
| 220              | 221      | K: $\pm 10\%$<br>M: $\pm 20\%$ | █        |          |          |          |          |  |
| 330              | 331      |                                |          |          |          |          |          |  |
| 470              | 471      |                                |          |          |          |          |          |  |
| 680              | 681      |                                |          |          |          |          |          |  |
| 1,000            | 102      |                                |          |          |          |          |          |  |
| 1,500            | 152      |                                |          |          |          |          |          |  |
| 2,200            | 222      |                                |          |          |          |          |          |  |
| 3,300            | 332      |                                |          |          |          |          |          |  |
| 4,700            | 472      |                                |          |          |          |          |          |  |
| 6,800            | 682      |                                |          |          |          |          |          |  |
| 10,000           | 103      |                                |          | █        |          |          |          |  |
| 15,000           | 153      |                                |          | █        |          |          |          |  |
| 22,000           | 223      |                                |          | █        |          |          |          |  |
| 33,000           | 333      |                                |          |          |          |          |          |  |
| 47,000           | 473      |                                |          | █        |          |          |          |  |
| 68,000           | 683      |                                |          | █        |          |          |          |  |
| 100,000          | 104      |                                |          |          |          |          | █        |  |
| 150,000          | 154      |                                |          |          |          |          | █        |  |
| 220,000          | 224      |                                |          |          |          |          | █        |  |

Standard Thickness



0.50 mm



## Capacitance Range Chart

## C1005 [EIA CC0402]

### Capacitance Range Chart

Temperature Characteristics: X5R ( $\pm 15\%$ ), X6S ( $\pm 22\%$ ), Y5V (+22/-82%)

Rated Voltage: 50V (1H), 35V (1V), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

| Capacitance (pF) | Cap Code | Tolerance                      | X6S      |          |          |          |          |           |         |  |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|-----------|---------|--|
|                  |          |                                | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) |  |
| 10,000           | 103      | K: $\pm 10\%$<br>M: $\pm 20\%$ |          |          |          |          |          |           |         |  |
| 22,000           | 223      |                                |          |          |          |          |          |           |         |  |
| 47,000           | 473      |                                |          |          |          |          |          |           |         |  |
| 100,000          | 104      |                                |          |          |          |          |          |           |         |  |
| 220,000          | 224      |                                |          |          |          |          |          |           |         |  |
| 470,000          | 474      |                                |          |          |          |          |          |           |         |  |
| 1,000,000        | 105      |                                |          |          |          |          |          |           |         |  |
| 2,200,000        | 225      |                                |          |          |          |          |          |           |         |  |

| Capacitance (pF) | Cap Code | Tolerance                      | X5R      |          |          |          |          |           |         |  |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|-----------|---------|--|
|                  |          |                                | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) |  |
| 220              | 221      | K: $\pm 10\%$<br>M: $\pm 20\%$ |          |          |          |          |          |           |         |  |
| 330              | 331      |                                |          |          |          |          |          |           |         |  |
| 470              | 471      |                                |          |          |          |          |          |           |         |  |
| 680              | 681      |                                |          |          |          |          |          |           |         |  |
| 1,000            | 102      |                                |          |          |          |          |          |           |         |  |
| 1,500            | 152      |                                |          |          |          |          |          |           |         |  |
| 2,200            | 222      |                                |          |          |          |          |          |           |         |  |
| 3,300            | 332      |                                |          |          |          |          |          |           |         |  |
| 4,700            | 472      |                                |          |          |          |          |          |           |         |  |
| 6,800            | 682      |                                |          |          |          |          |          |           |         |  |
| 10,000           | 103      |                                |          |          |          |          |          |           |         |  |
| 15,000           | 153      |                                |          |          |          |          |          |           |         |  |
| 22,000           | 223      |                                |          |          |          |          |          |           |         |  |
| 33,000           | 333      |                                |          |          |          |          |          |           |         |  |
| 47,000           | 473      |                                |          |          |          |          |          |           |         |  |
| 68,000           | 683      |                                |          |          |          |          |          |           |         |  |
| 100,000          | 104      |                                |          |          |          |          |          |           |         |  |
| 220,000          | 224      |                                |          |          |          |          |          |           |         |  |
| 330,000          | 334      |                                |          |          |          |          |          |           |         |  |
| 470,000          | 474      |                                |          |          |          |          |          |           |         |  |
| 1,000,000        | 105      |                                |          |          |          |          |          |           |         |  |
| 1,500,000        | 155      |                                |          |          |          |          |          |           |         |  |
| 2,200,000        | 225      |                                |          |          |          |          |          |           |         |  |
| 3,300,000        | 335      |                                |          |          |          |          |          |           |         |  |
| 4,700,000        | 475      |                                |          |          |          |          |          |           |         |  |

| Capacitance (pF) | Cap Code | Tolerance   | Y5V      |          |          |          |           |
|------------------|----------|-------------|----------|----------|----------|----------|-----------|
|                  |          |             | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 10,000           | 103      | Z: +80/-20% |          |          |          |          |           |
| 100,000          | 104      |             |          |          |          |          |           |
| 220,000          | 224      |             |          |          |          |          |           |
| 470,000          | 474      |             |          |          |          |          |           |
| 1,000,000        | 105      |             |          |          |          |          |           |

Standard Thickness

0.50 mm





## Capacitance Range Table

## C1005 [EIA CC0402]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1005C0G1H0R5B                     | C0G                         | 50V           | 0.5              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H0R5C                     | C0G                         | 50V           | 0.5              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1HR75C                     | C0G                         | 50V           | 0.75             | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H010B                     | C0G                         | 50V           | 1.0              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H010C                     | C0G                         | 50V           | 1.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H1R2B                     | C0G                         | 50V           | 1.2              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H1R2C                     | C0G                         | 50V           | 1.2              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H1R5B                     | C0G                         | 50V           | 1.5              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H1R5C                     | C0G                         | 50V           | 1.5              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H1R8B                     | C0G                         | 50V           | 1.8              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H1R8C                     | C0G                         | 50V           | 1.8              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H020B                     | C0G                         | 50V           | 2.0              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H020C                     | C0G                         | 50V           | 2.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H2R2B                     | C0G                         | 50V           | 2.2              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H2R2C                     | C0G                         | 50V           | 2.2              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H2R5C                     | C0G                         | 50V           | 2.5              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H2R7B                     | C0G                         | 50V           | 2.7              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H2R7C                     | C0G                         | 50V           | 2.7              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H030B                     | C0G                         | 50V           | 3.0              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H030C                     | C0G                         | 50V           | 3.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H3R3B                     | C0G                         | 50V           | 3.3              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H3R3C                     | C0G                         | 50V           | 3.3              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H3R5C                     | C0G                         | 50V           | 3.5              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H3R9B                     | C0G                         | 50V           | 3.9              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H3R9C                     | C0G                         | 50V           | 3.9              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H040B                     | C0G                         | 50V           | 4.0              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H040C                     | C0G                         | 50V           | 4.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H4R7B                     | C0G                         | 50V           | 4.7              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H4R7C                     | C0G                         | 50V           | 4.7              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H050B                     | C0G                         | 50V           | 5.0              | ± 0.10pF              | 0.50 ± 0.05    |
| C1005C0G1H050C                     | C0G                         | 50V           | 5.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H5R6C                     | C0G                         | 50V           | 5.6              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H5R6D                     | C0G                         | 50V           | 5.6              | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H060C                     | C0G                         | 50V           | 6.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H060D                     | C0G                         | 50V           | 6.0              | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H6R8C                     | C0G                         | 50V           | 6.8              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H6R8D                     | C0G                         | 50V           | 6.8              | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H070C                     | C0G                         | 50V           | 7.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H070D                     | C0G                         | 50V           | 7.0              | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H080C                     | C0G                         | 50V           | 8.0              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H080D                     | C0G                         | 50V           | 8.0              | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H8R2C                     | C0G                         | 50V           | 8.2              | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H8R2D                     | C0G                         | 50V           | 8.2              | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H090C                     | C0G                         | 50V           | 9.0              | ± 0.25pF              | 0.50 ± 0.05    |



## Capacitance Range Table

## C1005 [EIA CC0402]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1005C0G1H090D                     | C0G                         | 50V           | 9.0              | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H100C                     | C0G                         | 50V           | 10               | ± 0.25pF              | 0.50 ± 0.05    |
| C1005C0G1H100D                     | C0G                         | 50V           | 10               | ± 0.50pF              | 0.50 ± 0.05    |
| C1005C0G1H110J                     | C0G                         | 50V           | 11               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H120J                     | C0G                         | 50V           | 12               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H130J                     | C0G                         | 50V           | 13               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H150J                     | C0G                         | 50V           | 15               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H160J                     | C0G                         | 50V           | 16               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H180J                     | C0G                         | 50V           | 18               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H200J                     | C0G                         | 50V           | 20               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H220J                     | C0G                         | 50V           | 22               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H240J                     | C0G                         | 50V           | 24               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H270J                     | C0G                         | 50V           | 27               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H300J                     | C0G                         | 50V           | 30               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H330J                     | C0G                         | 50V           | 33               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H360J                     | C0G                         | 50V           | 36               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H390J                     | C0G                         | 50V           | 39               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H430J                     | C0G                         | 50V           | 43               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H470J                     | C0G                         | 50V           | 47               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H510J                     | C0G                         | 50V           | 51               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H560J                     | C0G                         | 50V           | 56               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H620J                     | C0G                         | 50V           | 62               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H680J                     | C0G                         | 50V           | 68               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H750J                     | C0G                         | 50V           | 75               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H820J                     | C0G                         | 50V           | 82               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H910J                     | C0G                         | 50V           | 91               | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H101J                     | C0G                         | 50V           | 100              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H121J                     | C0G                         | 50V           | 120              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H151J                     | C0G                         | 50V           | 150              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H181J                     | C0G                         | 50V           | 180              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H221J                     | C0G                         | 50V           | 220              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H271J                     | C0G                         | 50V           | 270              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H331J                     | C0G                         | 50V           | 330              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H391J                     | C0G                         | 50V           | 390              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H471J                     | C0G                         | 50V           | 470              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H561J                     | C0G                         | 50V           | 560              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H681J                     | C0G                         | 50V           | 680              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H821J                     | C0G                         | 50V           | 820              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1H102J                     | C0G                         | 50V           | 1,000            | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1E561J                     | C0G                         | 25V           | 560              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1E681J                     | C0G                         | 25V           | 680              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1E821J                     | C0G                         | 25V           | 820              | ± 5%                  | 0.50 ± 0.05    |
| C1005C0G1E102J                     | C0G                         | 25V           | 1,000            | ± 5%                  | 0.50 ± 0.05    |



## Capacitance Range Table

## C1005 [EIA CC0402]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1005X7R1H221K                     | X7R                         | 50V           | 220              | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H221M                     | X7R                         | 50V           | 220              | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H331K                     | X7R                         | 50V           | 330              | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H331M                     | X7R                         | 50V           | 330              | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H471K                     | X7R                         | 50V           | 470              | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H471M                     | X7R                         | 50V           | 470              | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H681K                     | X7R                         | 50V           | 680              | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H681M                     | X7R                         | 50V           | 680              | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H102K                     | X7R                         | 50V           | 1,000            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H102M                     | X7R                         | 50V           | 1,000            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H152K                     | X7R                         | 50V           | 1,500            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H152M                     | X7R                         | 50V           | 1,500            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H222K                     | X7R                         | 50V           | 2,200            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H222M                     | X7R                         | 50V           | 2,200            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H332K                     | X7R                         | 50V           | 3,300            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H332M                     | X7R                         | 50V           | 3,300            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H472K                     | X7R                         | 50V           | 4,700            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H472M                     | X7R                         | 50V           | 4,700            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H682K                     | X7R                         | 50V           | 6,800            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H682M                     | X7R                         | 50V           | 6,800            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H103K                     | X7R                         | 50V           | 10,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H103M                     | X7R                         | 50V           | 10,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H153K                     | X7R                         | 50V           | 15,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H153M                     | X7R                         | 50V           | 15,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H223K                     | X7R                         | 50V           | 22,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H223M                     | X7R                         | 50V           | 22,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H333K                     | X7R                         | 50V           | 33,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H333M                     | X7R                         | 50V           | 33,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H473K                     | X7R                         | 50V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H473M                     | X7R                         | 50V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H683K                     | X7R                         | 50V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H683M                     | X7R                         | 50V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1H104K                     | X7R                         | 50V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1H104M                     | X7R                         | 50V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1V103K                     | X7R                         | 35V           | 10,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1V103M                     | X7R                         | 35V           | 10,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1V223K                     | X7R                         | 35V           | 22,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1V223M                     | X7R                         | 35V           | 22,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1V473K                     | X7R                         | 35V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1V473M                     | X7R                         | 35V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1V104K                     | X7R                         | 35V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1V104M                     | X7R                         | 35V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E102K                     | X7R                         | 25V           | 1,000            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E102M                     | X7R                         | 25V           | 1,000            | ± 20%                 | 0.50 ± 0.05    |



## Capacitance Range Table

## C1005 [EIA CC0402]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1005X7R1E152K                     | X7R                         | 25V           | 1,500            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E152M                     | X7R                         | 25V           | 1,500            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E222K                     | X7R                         | 25V           | 2,200            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E222M                     | X7R                         | 25V           | 2,200            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E332K                     | X7R                         | 25V           | 3,300            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E332M                     | X7R                         | 25V           | 3,300            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E472K                     | X7R                         | 25V           | 4,700            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E472M                     | X7R                         | 25V           | 4,700            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E682K                     | X7R                         | 25V           | 6,800            | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E682M                     | X7R                         | 25V           | 6,800            | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E103J                     | X7R                         | 25V           | 10,000           | ± 5%                  | 0.50 ± 0.05    |
| C1005X7R1E103K                     | X7R                         | 25V           | 10,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E103M                     | X7R                         | 25V           | 10,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E153K                     | X7R                         | 25V           | 15,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E153M                     | X7R                         | 25V           | 15,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E223K                     | X7R                         | 25V           | 22,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E223M                     | X7R                         | 25V           | 22,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E333K                     | X7R                         | 25V           | 33,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E333M                     | X7R                         | 25V           | 33,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E473K                     | X7R                         | 25V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E473M                     | X7R                         | 25V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E683K                     | X7R                         | 25V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E683M                     | X7R                         | 25V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1E104K                     | X7R                         | 25V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1E104M                     | X7R                         | 25V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C103K                     | X7R                         | 16V           | 10,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C103M                     | X7R                         | 16V           | 10,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C153K                     | X7R                         | 16V           | 15,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C153M                     | X7R                         | 16V           | 15,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C223K                     | X7R                         | 16V           | 22,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C223M                     | X7R                         | 16V           | 22,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C333K                     | X7R                         | 16V           | 33,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C333M                     | X7R                         | 16V           | 33,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C473K                     | X7R                         | 16V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C473M                     | X7R                         | 16V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C683K                     | X7R                         | 16V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C683M                     | X7R                         | 16V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C104K                     | X7R                         | 16V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C104M                     | X7R                         | 16V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C154K                     | X7R                         | 16V           | 150,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C154M                     | X7R                         | 16V           | 150,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1C224K                     | X7R                         | 16V           | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1C224M                     | X7R                         | 16V           | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1A473K                     | X7R                         | 10V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |



## Capacitance Range Table

## C1005 [EIA CC0402]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X6S(-55 to 105°C, ±22%), X5R (-55 to +85°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1005X7R1A473M                     | X7R                         | 10V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1A683K                     | X7R                         | 10V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1A683M                     | X7R                         | 10V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1A104K                     | X7R                         | 10V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1A104M                     | X7R                         | 10V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X7R1A224K                     | X7R                         | 10V           | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X7R1A224M                     | X7R                         | 10V           | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1H103K                     | X6S                         | 50V           | 10,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1H103M                     | X6S                         | 50V           | 10,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1H223K                     | X6S                         | 50V           | 22,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1H223M                     | X6S                         | 50V           | 22,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1H473K                     | X6S                         | 50V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1H473M                     | X6S                         | 50V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1H104K                     | X6S                         | 50V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1H104M                     | X6S                         | 50V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1V104K                     | X6S                         | 35V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1V104M                     | X6S                         | 35V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1E104K                     | X6S                         | 25V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1E104M                     | X6S                         | 25V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1E224K                     | X6S                         | 25V           | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1E224M                     | X6S                         | 25V           | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1C224K                     | X6S                         | 16V           | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1C224M                     | X6S                         | 16V           | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1A474K                     | X6S                         | 10V           | 470,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1A474M                     | X6S                         | 10V           | 470,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S1A105K                     | X6S                         | 10V           | 1,000,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S1A105M                     | X6S                         | 10V           | 1,000,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S0J474K                     | X6S                         | 6.3V          | 470,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S0J474M                     | X6S                         | 6.3V          | 470,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S0J105K                     | X6S                         | 6.3V          | 1,000,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S0J105M                     | X6S                         | 6.3V          | 1,000,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S0G105K                     | X6S                         | 4V            | 1,000,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X6S0G105M                     | X6S                         | 4V            | 1,000,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X6S0G225M                     | X6S                         | 4V            | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1H221K                     | X5R                         | 50V           | 220              | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H331K                     | X5R                         | 50V           | 330              | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H471K                     | X5R                         | 50V           | 470              | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H681K                     | X5R                         | 50V           | 680              | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H102K                     | X5R                         | 50V           | 1,000            | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H152K                     | X5R                         | 50V           | 1,500            | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H222K                     | X5R                         | 50V           | 2,200            | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H332K                     | X5R                         | 50V           | 3,300            | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H472K                     | X5R                         | 50V           | 4,700            | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H682K                     | X5R                         | 50V           | 6,800            | ± 10%                 | 0.50 ± 0.05    |



## Capacitance Range Table

## C1005 [EIA CC0402]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1005X5R1H473K                     | X5R                         | 50V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H473M                     | X5R                         | 50V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1H683K                     | X5R                         | 50V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H683M                     | X5R                         | 50V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1H104K                     | X5R                         | 50V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1H104M                     | X5R                         | 50V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1V104K                     | X5R                         | 35V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1V104M                     | X5R                         | 35V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1E103K                     | X5R                         | 25V           | 10,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E153K                     | X5R                         | 25V           | 15,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E223K                     | X5R                         | 25V           | 22,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E333K                     | X5R                         | 25V           | 33,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E473K                     | X5R                         | 25V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E473M                     | X5R                         | 25V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1E683K                     | X5R                         | 25V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E683M                     | X5R                         | 25V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1E104K                     | X5R                         | 25V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E104M                     | X5R                         | 25V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1E224K                     | X5R                         | 25V           | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1E224M                     | X5R                         | 25V           | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1C473K                     | X5R                         | 16V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1C473M                     | X5R                         | 16V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1C683K                     | X5R                         | 16V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1C683M                     | X5R                         | 16V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1C104K                     | X5R                         | 16V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1C104M                     | X5R                         | 16V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1C224K                     | X5R                         | 16V           | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1C224M                     | X5R                         | 16V           | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1C334K                     | X5R                         | 16V           | 330,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1C334M                     | X5R                         | 16V           | 330,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1C474K                     | X5R                         | 16V           | 470,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1C474M                     | X5R                         | 16V           | 470,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1C105K                     | X5R                         | 16V           | 1,000,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1C105M                     | X5R                         | 16V           | 1,000,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A473K                     | X5R                         | 10V           | 47,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A473M                     | X5R                         | 10V           | 47,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A683K                     | X5R                         | 10V           | 68,000           | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A683M                     | X5R                         | 10V           | 68,000           | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A104K                     | X5R                         | 10V           | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A104M                     | X5R                         | 10V           | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A224K                     | X5R                         | 10V           | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A224M                     | X5R                         | 10V           | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A334K                     | X5R                         | 10V           | 330,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A334M                     | X5R                         | 10V           | 330,000          | ± 20%                 | 0.50 ± 0.05    |





## Capacitance Range Table

## C1005 [EIA CC0402]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%), Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1005X5R1A474K                     | X5R                         | 10V           | 470,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A474M                     | X5R                         | 10V           | 470,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A105K                     | X5R                         | 10V           | 1,000,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A105M                     | X5R                         | 10V           | 1,000,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A155K                     | X5R                         | 10V           | 1,500,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A155M                     | X5R                         | 10V           | 1,500,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R1A225K                     | X5R                         | 10V           | 2,200,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R1A225M                     | X5R                         | 10V           | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0J104K                     | X5R                         | 6.3V          | 100,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R0J104M                     | X5R                         | 6.3V          | 100,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0J224K                     | X5R                         | 6.3V          | 220,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R0J224M                     | X5R                         | 6.3V          | 220,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0J334K                     | X5R                         | 6.3V          | 330,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R0J334M                     | X5R                         | 6.3V          | 330,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0J474K                     | X5R                         | 6.3V          | 470,000          | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R0J474M                     | X5R                         | 6.3V          | 470,000          | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0J105K                     | X5R                         | 6.3V          | 1,000,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R0J105M                     | X5R                         | 6.3V          | 1,000,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0J225K                     | X5R                         | 6.3V          | 2,200,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R0J225M                     | X5R                         | 6.3V          | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0J335K                     | X5R                         | 6.3V          | 3,300,000        | ± 10%                 | 0.50 ± 0.15    |
| C1005X5R0J335M                     | X5R                         | 6.3V          | 3,300,000        | ± 20%                 | 0.50 ± 0.15    |
| C1005X5R0J475K                     | X5R                         | 6.3V          | 4,700,000        | ± 10%                 | 0.50 ± 0.15    |
| C1005X5R0J475M                     | X5R                         | 6.3V          | 4,700,000        | ± 20%                 | 0.50 ± 0.15    |
| C1005X5R0G225K                     | X5R                         | 4V            | 2,200,000        | ± 10%                 | 0.50 ± 0.05    |
| C1005X5R0G225M                     | X5R                         | 4V            | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1005X5R0G335K                     | X5R                         | 4V            | 3,300,000        | ± 10%                 | 0.50 ± 0.15    |
| C1005X5R0G335M                     | X5R                         | 4V            | 3,300,000        | ± 20%                 | 0.50 ± 0.15    |
| C1005X5R0G475K                     | X5R                         | 4V            | 4,700,000        | ± 10%                 | 0.50 ± 0.15    |
| C1005X5R0G475M                     | X5R                         | 4V            | 4,700,000        | ± 20%                 | 0.50 ± 0.15    |
| C1005Y5V1H103Z                     | Y5V                         | 50V           | 10,000           | +80/-20%              | 0.50 ± 0.05    |
| C1005Y5V1E104Z                     | Y5V                         | 25V           | 100,000          | +80/-20%              | 0.50 ± 0.05    |
| C1005Y5V1E224Z                     | Y5V                         | 25V           | 220,000          | +80/-20%              | 0.50 ± 0.05    |
| C1005Y5V1C104Z                     | Y5V                         | 16V           | 100,000          | +80/-20%              | 0.50 ± 0.05    |
| C1005Y5V1C224Z                     | Y5V                         | 16V           | 220,000          | +80/-20%              | 0.50 ± 0.05    |
| C1005Y5V1A224Z                     | Y5V                         | 10V           | 220,000          | +80/-20%              | 0.50 ± 0.05    |
| C1005Y5V1A474Z                     | Y5V                         | 10V           | 470,000          | +80/-20%              | 0.50 ± 0.05    |
| C1005Y5V0J105Z                     | Y5V                         | 6.3V          | 1,000,000        | +80/-20%              | 0.50 ± 0.05    |



## Capacitance Range Chart

## C1608 [EIA CC0603]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ )  
 Rated Voltage: 50V (1H), 25V (1E)

| Capacitance (pF) | Cap Code | Tolerance                                        | C0G                                              |          |
|------------------|----------|--------------------------------------------------|--------------------------------------------------|----------|
|                  |          |                                                  | 1H (50V)                                         | 1E (25V) |
| 0.1              | 0R1      | B: $\pm 0.10\text{pF}$<br>C: $\pm 0.25\text{pF}$ |                                                  |          |
| 0.5              | 0R5      |                                                  |                                                  |          |
| 0.75             | R75      |                                                  |                                                  |          |
| 1                | 010      |                                                  |                                                  |          |
| 1.2              | 1R2      |                                                  |                                                  |          |
| 1.5              | 1R5      |                                                  |                                                  |          |
| 1.8              | 1R8      |                                                  |                                                  |          |
| 2.2              | 2R2      |                                                  |                                                  |          |
| 2.7              | 2R7      |                                                  |                                                  |          |
| 3.3              | 3R3      |                                                  |                                                  |          |
| 3.9              | 3R9      |                                                  |                                                  |          |
| 4.7              | 4R7      |                                                  |                                                  |          |
| 5.6              | 5R6      |                                                  | C: $\pm 0.25\text{pF}$<br>D: $\pm 0.50\text{pF}$ |          |
| 6.8              | 6R8      |                                                  |                                                  |          |
| 8.2              | 8R2      |                                                  |                                                  |          |
| 10               | 100      | J: $\pm 5\%$                                     |                                                  |          |
| 11               | 110      |                                                  |                                                  |          |
| 12               | 120      |                                                  |                                                  |          |
| 13               | 130      |                                                  |                                                  |          |
| 15               | 150      |                                                  |                                                  |          |
| 16               | 160      |                                                  |                                                  |          |
| 18               | 180      |                                                  |                                                  |          |
| 20               | 200      |                                                  |                                                  |          |
| 22               | 220      |                                                  |                                                  |          |
| 24               | 240      |                                                  |                                                  |          |
| 27               | 270      |                                                  |                                                  |          |
| 30               | 300      |                                                  |                                                  |          |
| 33               | 330      |                                                  |                                                  |          |
| 36               | 360      |                                                  |                                                  |          |
| 39               | 390      |                                                  |                                                  |          |
| 43               | 430      |                                                  |                                                  |          |
| 47               | 470      |                                                  |                                                  |          |
| 51               | 510      |                                                  |                                                  |          |
| 56               | 560      |                                                  |                                                  |          |
| 62               | 620      |                                                  |                                                  |          |
| 68               | 680      |                                                  |                                                  |          |
| 75               | 750      |                                                  |                                                  |          |
| 82               | 820      |                                                  |                                                  |          |

| Capacitance (pF) | Cap Code | Tolerance    | C0G      |          |
|------------------|----------|--------------|----------|----------|
|                  |          |              | 1H (50V) | 1E (25V) |
| 91               | 910      | J: $\pm 5\%$ |          |          |
| 100              | 101      |              |          |          |
| 110              | 111      |              |          |          |
| 120              | 121      |              |          |          |
| 130              | 131      |              |          |          |
| 150              | 151      |              |          |          |
| 160              | 161      |              |          |          |
| 180              | 181      |              |          |          |
| 200              | 201      |              |          |          |
| 220              | 221      |              |          |          |
| 240              | 241      |              |          |          |
| 270              | 271      |              |          |          |
| 300              | 301      |              |          |          |
| 330              | 331      |              |          |          |
| 360              | 361      |              |          |          |
| 390              | 391      |              |          |          |
| 430              | 431      |              |          |          |
| 470              | 471      |              |          |          |
| 510              | 511      |              |          |          |
| 560              | 561      |              |          |          |
| 620              | 621      |              |          |          |
| 680              | 681      |              |          |          |
| 750              | 751      |              |          |          |
| 820              | 821      |              |          |          |
| 910              | 911      |              |          |          |
| 1,000            | 102      |              |          |          |
| 1,200            | 122      |              |          |          |
| 1,500            | 152      |              |          |          |
| 1,800            | 182      |              |          |          |
| 2,200            | 222      |              |          |          |
| 2,700            | 272      |              |          |          |
| 3,300            | 332      |              |          |          |
| 3,900            | 392      |              |          |          |
| 4,700            | 472      |              |          |          |
| 5,600            | 562      |              |          |          |
| 6,800            | 682      |              |          |          |
| 8,200            | 822      |              |          |          |
| 10,000           | 103      |              |          |          |

• Standard capacitance is shown. Please refer to Capacitance Range Table for additional capacitance values.

### Capacitance Range Chart

Temperature Characteristics: X6S ( $\pm 22\%$ )  
 Rated Voltage: 50V (1H), 35V (1V), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

| Capacitance (pF) | Cap Code | Tolerance                      | X6S      |          |          |          |          |           |         |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|-----------|---------|
|                  |          |                                | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) |
| 220,000          | 224      | K: $\pm 10\%$<br>M: $\pm 20\%$ |          |          |          |          |          |           |         |
| 470,000          | 474      |                                |          |          |          |          |          |           |         |
| 1,000,000        | 105      |                                |          |          |          |          |          |           |         |
| 2,200,000        | 225      |                                |          |          |          |          |          |           |         |
| 4,700,000        | 475      |                                |          |          |          |          |          |           |         |
| 10,000,000       | 106      |                                |          |          |          |          |          |           |         |

Standard Thickness





## Capacitance Range Chart

## C1608 [EIA CC0603]

### Capacitance Range Chart

Temperature Characteristics: X7R ( $\pm 15\%$ ), X5R ( $\pm 15\%$ ), Y5V (+22/-82%)

Rated Voltage: 50V (1H), 35V (1V), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

| Capacitance (pF) | Cap Code | Tolerance                      | X5R      |          |          |          |          |           |         |  |   |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|-----------|---------|--|---|
|                  |          |                                | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) |  |   |
| 100,000          | 104      | K: $\pm 10\%$<br>M: $\pm 20\%$ | █        |          |          |          |          |           |         |  |   |
| 150,000          | 154      |                                |          |          |          |          |          |           |         |  |   |
| 220,000          | 224      |                                |          |          |          |          |          |           |         |  |   |
| 330,000          | 334      |                                |          |          |          |          |          |           |         |  |   |
| 470,000          | 474      |                                |          |          |          |          |          |           |         |  |   |
| 680,000          | 684      |                                |          |          |          |          |          |           |         |  |   |
| 1,000,000        | 105      |                                |          | █        | █        |          |          |           |         |  |   |
| 1,500,000        | 155      |                                |          |          |          |          |          |           |         |  |   |
| 2,200,000        | 225      |                                |          |          |          |          |          |           |         |  |   |
| 3,300,000        | 335      |                                |          |          |          |          |          |           |         |  |   |
| 4,700,000        | 475      |                                |          |          |          |          |          |           |         |  |   |
| 6,800,000        | 685      |                                |          |          |          |          |          |           |         |  |   |
| 10,000,000       | 106      |                                |          |          |          |          |          |           |         |  | █ |

| Capacitance (pF) | Cap Code | Tolerance                      | X7R      |          |          |          |          |           |  |   |  |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|-----------|--|---|--|
|                  |          |                                | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |  |   |  |
| 100              | 101      | K: $\pm 10\%$<br>M: $\pm 20\%$ | █        |          |          |          |          |           |  |   |  |
| 220              | 221      |                                |          |          |          |          |          |           |  |   |  |
| 330              | 331      |                                |          |          |          |          |          |           |  |   |  |
| 470              | 471      |                                |          |          |          |          |          |           |  |   |  |
| 680              | 681      |                                |          |          |          |          |          |           |  |   |  |
| 1,000            | 102      |                                |          |          |          |          |          |           |  |   |  |
| 1,500            | 152      |                                |          |          |          |          |          |           |  |   |  |
| 2,200            | 222      |                                |          |          |          |          |          |           |  |   |  |
| 3,300            | 332      |                                |          |          |          |          |          |           |  |   |  |
| 4,700            | 472      |                                |          |          |          |          |          |           |  |   |  |
| 6,800            | 682      |                                |          |          |          |          |          |           |  |   |  |
| 10,000           | 103      |                                |          |          |          |          |          |           |  |   |  |
| 15,000           | 153      |                                |          |          |          |          |          |           |  |   |  |
| 22,000           | 223      |                                |          |          |          |          |          |           |  |   |  |
| 33,000           | 333      |                                |          |          |          |          |          |           |  |   |  |
| 47,000           | 473      |                                |          |          |          |          |          |           |  |   |  |
| 68,000           | 683      |                                |          |          |          |          |          |           |  |   |  |
| 100,000          | 104      |                                |          | █        |          |          |          |           |  |   |  |
| 150,000          | 154      |                                |          |          |          |          |          |           |  |   |  |
| 220,000          | 224      |                                |          |          |          |          |          |           |  |   |  |
| 330,000          | 334      |                                |          |          |          |          |          |           |  |   |  |
| 470,000          | 474      |                                |          |          |          |          |          |           |  |   |  |
| 680,000          | 684      |                                |          |          |          |          |          |           |  |   |  |
| 1,000,000        | 105      |                                |          |          |          |          |          |           |  |   |  |
| 2,200,000        | 225      |                                |          |          |          |          |          |           |  | █ |  |

| Capacitance (pF) | Cap Code | Tolerance   | Y5V      |          |          |          |           |
|------------------|----------|-------------|----------|----------|----------|----------|-----------|
|                  |          |             | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 100,000          | 104      | Z: +80/-20% | █        |          |          |          |           |
| 220,000          | 224      |             |          |          |          |          |           |
| 470,000          | 474      |             |          |          |          |          |           |
| 1,000,000        | 105      |             |          |          |          |          |           |
| 2,200,000        | 225      |             |          |          |          |          |           |
| 4,700,000        | 475      |             |          |          |          |          |           |
| 10,000,000       | 106      |             |          |          |          |          | █         |

Standard Thickness

0.80 mm



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608C0G1H0R5B                     | C0G                         | 50V           | 0.5              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H0R5C                     | C0G                         | 50V           | 0.5              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1HR75C                     | C0G                         | 50V           | 0.75             | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H010B                     | C0G                         | 50V           | 1.0              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H010C                     | C0G                         | 50V           | 1.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H1R2B                     | C0G                         | 50V           | 1.2              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H1R2C                     | C0G                         | 50V           | 1.2              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H1R5B                     | C0G                         | 50V           | 1.5              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H1R5C                     | C0G                         | 50V           | 1.5              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H1R8B                     | C0G                         | 50V           | 1.8              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H1R8C                     | C0G                         | 50V           | 1.8              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H020B                     | C0G                         | 50V           | 2.0              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H020C                     | C0G                         | 50V           | 2.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H2R2B                     | C0G                         | 50V           | 2.2              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H2R2C                     | C0G                         | 50V           | 2.2              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H2R7B                     | C0G                         | 50V           | 2.7              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H2R7C                     | C0G                         | 50V           | 2.7              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H030B                     | C0G                         | 50V           | 3.0              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H030C                     | C0G                         | 50V           | 3.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H3R3B                     | C0G                         | 50V           | 3.3              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H3R3C                     | C0G                         | 50V           | 3.3              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H3R9B                     | C0G                         | 50V           | 3.9              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H3R9C                     | C0G                         | 50V           | 3.9              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H040B                     | C0G                         | 50V           | 4.0              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H040C                     | C0G                         | 50V           | 4.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H4R7B                     | C0G                         | 50V           | 4.7              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H4R7C                     | C0G                         | 50V           | 4.7              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H050B                     | C0G                         | 50V           | 5.0              | ± 0.10pF              | 0.80 ± 0.10    |
| C1608C0G1H050C                     | C0G                         | 50V           | 5.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H5R6C                     | C0G                         | 50V           | 5.6              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H5R6D                     | C0G                         | 50V           | 5.6              | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H060C                     | C0G                         | 50V           | 6.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H060D                     | C0G                         | 50V           | 6.0              | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H6R8C                     | C0G                         | 50V           | 6.8              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H6R8D                     | C0G                         | 50V           | 6.8              | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H070C                     | C0G                         | 50V           | 7.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H070D                     | C0G                         | 50V           | 7.0              | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H080C                     | C0G                         | 50V           | 8.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H080D                     | C0G                         | 50V           | 8.0              | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H8R2C                     | C0G                         | 50V           | 8.2              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H8R2D                     | C0G                         | 50V           | 8.2              | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H090C                     | C0G                         | 50V           | 9.0              | ± 0.25pF              | 0.80 ± 0.10    |
| C1608C0G1H090D                     | C0G                         | 50V           | 9.0              | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H100C                     | C0G                         | 50V           | 10               | ± 0.25pF              | 0.80 ± 0.10    |



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608C0G1H100D                     | C0G                         | 50V           | 10               | ± 0.50pF              | 0.80 ± 0.10    |
| C1608C0G1H110J                     | C0G                         | 50V           | 11               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H120J                     | C0G                         | 50V           | 12               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H130J                     | C0G                         | 50V           | 13               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H150J                     | C0G                         | 50V           | 15               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H160J                     | C0G                         | 50V           | 16               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H180J                     | C0G                         | 50V           | 18               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H200J                     | C0G                         | 50V           | 20               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H220J                     | C0G                         | 50V           | 22               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H240J                     | C0G                         | 50V           | 24               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H270J                     | C0G                         | 50V           | 27               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H300J                     | C0G                         | 50V           | 30               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H330J                     | C0G                         | 50V           | 33               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H360J                     | C0G                         | 50V           | 36               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H390J                     | C0G                         | 50V           | 39               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H430J                     | C0G                         | 50V           | 43               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H470J                     | C0G                         | 50V           | 47               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H510J                     | C0G                         | 50V           | 51               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H560J                     | C0G                         | 50V           | 56               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H620J                     | C0G                         | 50V           | 62               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H680J                     | C0G                         | 50V           | 68               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H750J                     | C0G                         | 50V           | 75               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H820J                     | C0G                         | 50V           | 82               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H910J                     | C0G                         | 50V           | 91               | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H101J                     | C0G                         | 50V           | 100              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H111J                     | C0G                         | 50V           | 110              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H121J                     | C0G                         | 50V           | 120              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H131J                     | C0G                         | 50V           | 130              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H151J                     | C0G                         | 50V           | 150              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H161J                     | C0G                         | 50V           | 160              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H181J                     | C0G                         | 50V           | 180              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H201J                     | C0G                         | 50V           | 200              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H221J                     | C0G                         | 50V           | 220              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H241J                     | C0G                         | 50V           | 240              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H271J                     | C0G                         | 50V           | 270              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H301J                     | C0G                         | 50V           | 300              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H331J                     | C0G                         | 50V           | 330              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H361J                     | C0G                         | 50V           | 360              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H391J                     | C0G                         | 50V           | 390              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H431J                     | C0G                         | 50V           | 430              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H471J                     | C0G                         | 50V           | 470              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H511J                     | C0G                         | 50V           | 510              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H561J                     | C0G                         | 50V           | 560              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H621J                     | C0G                         | 50V           | 620              | ± 5%                  | 0.80 ± 0.10    |



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608C0G1H681J                  | C0G                         | 50V           | 680              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H751J                  | C0G                         | 50V           | 750              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H821J                  | C0G                         | 50V           | 820              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H911J                  | C0G                         | 50V           | 910              | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H102J                  | C0G                         | 50V           | 1,000            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H122J                  | C0G                         | 50V           | 1,200            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H152J                  | C0G                         | 50V           | 1,500            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H182J                  | C0G                         | 50V           | 1,800            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H222J                  | C0G                         | 50V           | 2,200            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H272J                  | C0G                         | 50V           | 2,700            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H332J                  | C0G                         | 50V           | 3,300            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H392J                  | C0G                         | 50V           | 3,900            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H472J                  | C0G                         | 50V           | 4,700            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H562J                  | C0G                         | 50V           | 5,600            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H682J                  | C0G                         | 50V           | 6,800            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H822J                  | C0G                         | 50V           | 8,200            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1H103J                  | C0G                         | 50V           | 10,000           | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1E392J                  | C0G                         | 25V           | 3,900            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1E472J                  | C0G                         | 25V           | 4,700            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1E562J                  | C0G                         | 25V           | 5,600            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1E682J                  | C0G                         | 25V           | 6,800            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1E822J                  | C0G                         | 25V           | 8,200            | ± 5%                  | 0.80 ± 0.10    |
| C1608C0G1E103J                  | C0G                         | 25V           | 10,000           | ± 5%                  | 0.80 ± 0.10    |

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608X7R1H101K                  | X7R                         | 50V           | 100              | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H101M                  | X7R                         | 50V           | 100              | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1H221K                  | X7R                         | 50V           | 220              | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H221M                  | X7R                         | 50V           | 220              | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1H331K                  | X7R                         | 50V           | 330              | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H331M                  | X7R                         | 50V           | 330              | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1H471K                  | X7R                         | 50V           | 470              | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H471M                  | X7R                         | 50V           | 470              | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1H681K                  | X7R                         | 50V           | 680              | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H681M                  | X7R                         | 50V           | 680              | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1H102J                  | X7R                         | 50V           | 1,000            | ± 5%                  | 0.80 ± 0.10    |
| C1608X7R1H102K                  | X7R                         | 50V           | 1,000            | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H102M                  | X7R                         | 50V           | 1,000            | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1H152K                  | X7R                         | 50V           | 1,500            | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H152M                  | X7R                         | 50V           | 1,500            | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1H222K                  | X7R                         | 50V           | 2,200            | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1H222M                  | X7R                         | 50V           | 2,200            | ± 20%                 | 0.80 ± 0.10    |





## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature<br>Characteristics | Rated<br>Voltage | Capacitance<br>(pF) | Capacitance<br>Tolerance | Thickness<br>(mm) |
|------------------------------------|--------------------------------|------------------|---------------------|--------------------------|-------------------|
| C1608X7R1H332K                     | X7R                            | 50V              | 3,300               | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H332M                     | X7R                            | 50V              | 3,300               | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H472K                     | X7R                            | 50V              | 4,700               | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H472M                     | X7R                            | 50V              | 4,700               | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H682K                     | X7R                            | 50V              | 6,800               | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H682M                     | X7R                            | 50V              | 6,800               | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H103J                     | X7R                            | 50V              | 10,000              | ± 5%                     | 0.80 ± 0.10       |
| C1608X7R1H103K                     | X7R                            | 50V              | 10,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H103M                     | X7R                            | 50V              | 10,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H153K                     | X7R                            | 50V              | 15,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H153M                     | X7R                            | 50V              | 15,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H223K                     | X7R                            | 50V              | 22,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H223M                     | X7R                            | 50V              | 22,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H333K                     | X7R                            | 50V              | 33,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H333M                     | X7R                            | 50V              | 33,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H473K                     | X7R                            | 50V              | 47,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H473M                     | X7R                            | 50V              | 47,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H683K                     | X7R                            | 50V              | 68,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H683M                     | X7R                            | 50V              | 68,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H104K                     | X7R                            | 50V              | 100,000             | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H104M                     | X7R                            | 50V              | 100,000             | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H154K                     | X7R                            | 50V              | 150,000             | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H154M                     | X7R                            | 50V              | 150,000             | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H224K                     | X7R                            | 50V              | 220,000             | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H224M                     | X7R                            | 50V              | 220,000             | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H334K                     | X7R                            | 50V              | 330,000             | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H334M                     | X7R                            | 50V              | 330,000             | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1H474K                     | X7R                            | 50V              | 470,000             | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1H474M                     | X7R                            | 50V              | 470,000             | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1V334K                     | X7R                            | 35V              | 330,000             | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1V334M                     | X7R                            | 35V              | 330,000             | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1V474K                     | X7R                            | 35V              | 470,000             | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1V474M                     | X7R                            | 35V              | 470,000             | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1V105K                     | X7R                            | 35V              | 1,000,000           | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1V105M                     | X7R                            | 35V              | 1,000,000           | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1E103J                     | X7R                            | 25V              | 10,000              | ± 5%                     | 0.80 ± 0.10       |
| C1608X7R1E103K                     | X7R                            | 25V              | 10,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1E103M                     | X7R                            | 25V              | 10,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1E153K                     | X7R                            | 25V              | 15,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1E153M                     | X7R                            | 25V              | 15,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1E223K                     | X7R                            | 25V              | 22,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1E223M                     | X7R                            | 25V              | 22,000              | ± 20%                    | 0.80 ± 0.10       |
| C1608X7R1E333K                     | X7R                            | 25V              | 33,000              | ± 10%                    | 0.80 ± 0.10       |
| C1608X7R1E333M                     | X7R                            | 25V              | 33,000              | ± 20%                    | 0.80 ± 0.10       |



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608X7R1E473K                     | X7R                         | 25V           | 47,000           | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E473M                     | X7R                         | 25V           | 47,000           | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E683K                     | X7R                         | 25V           | 68,000           | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E683M                     | X7R                         | 25V           | 68,000           | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E104K                     | X7R                         | 25V           | 100,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E104M                     | X7R                         | 25V           | 100,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E154K                     | X7R                         | 25V           | 150,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E154M                     | X7R                         | 25V           | 150,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E224K                     | X7R                         | 25V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E224M                     | X7R                         | 25V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E334K                     | X7R                         | 25V           | 330,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E334M                     | X7R                         | 25V           | 330,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E474K                     | X7R                         | 25V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E474M                     | X7R                         | 25V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E684K                     | X7R                         | 25V           | 680,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E684M                     | X7R                         | 25V           | 680,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1E105K                     | X7R                         | 25V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1E105M                     | X7R                         | 25V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C223K                     | X7R                         | 16V           | 22,000           | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C223M                     | X7R                         | 16V           | 22,000           | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C333K                     | X7R                         | 16V           | 33,000           | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C333M                     | X7R                         | 16V           | 33,000           | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C473K                     | X7R                         | 16V           | 47,000           | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C473M                     | X7R                         | 16V           | 47,000           | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C683K                     | X7R                         | 16V           | 68,000           | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C683M                     | X7R                         | 16V           | 68,000           | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C104K                     | X7R                         | 16V           | 100,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C104M                     | X7R                         | 16V           | 100,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C154K                     | X7R                         | 16V           | 150,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C154M                     | X7R                         | 16V           | 150,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C224K                     | X7R                         | 16V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C224M                     | X7R                         | 16V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C334K                     | X7R                         | 16V           | 330,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C334M                     | X7R                         | 16V           | 330,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C474K                     | X7R                         | 16V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C474M                     | X7R                         | 16V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C684K                     | X7R                         | 16V           | 680,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C684M                     | X7R                         | 16V           | 680,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1C105K                     | X7R                         | 16V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1C105M                     | X7R                         | 16V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1A224K                     | X7R                         | 10V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1A224M                     | X7R                         | 10V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1A334K                     | X7R                         | 10V           | 330,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1A334M                     | X7R                         | 10V           | 330,000          | ± 20%                 | 0.80 ± 0.10    |



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X6S (-55 to +105°C, ±22%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608X7R1A474K                     | X7R                         | 10V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1A474M                     | X7R                         | 10V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1A105K                     | X7R                         | 10V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1A105M                     | X7R                         | 10V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R1A225K                     | X7R                         | 10V           | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R1A225M                     | X7R                         | 10V           | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X7R0J225K                     | X7R                         | 6.3V          | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X7R0J225M                     | X7R                         | 6.3V          | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1H224K                     | X6S                         | 50V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1H224M                     | X6S                         | 50V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1H474K                     | X6S                         | 50V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1H474M                     | X6S                         | 50V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1H105K                     | X6S                         | 50V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1H105M                     | X6S                         | 50V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1V224K                     | X6S                         | 35V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1V224M                     | X6S                         | 35V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1V474K                     | X6S                         | 35V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1V474M                     | X6S                         | 35V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1V105K                     | X6S                         | 35V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1V105M                     | X6S                         | 35V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1E474K                     | X6S                         | 25V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1E474M                     | X6S                         | 25V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1E105K                     | X6S                         | 25V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1E105M                     | X6S                         | 25V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1C105K                     | X6S                         | 16V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1C105M                     | X6S                         | 16V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1C225K                     | X6S                         | 16V           | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1C225M                     | X6S                         | 16V           | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S1A225K/0.50                | X6S                         | 10V           | 2,200,000        | ± 10%                 | 0.50 ± 0.05    |
| C1608X6S1A225M/0.50                | X6S                         | 10V           | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1608X6S1A475K                     | X6S                         | 10V           | 4,700,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S1A475M                     | X6S                         | 10V           | 4,700,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S0J225K                     | X6S                         | 6.3V          | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S0J225M                     | X6S                         | 6.3V          | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S0J475K                     | X6S                         | 6.3V          | 4,700,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S0J475M                     | X6S                         | 6.3V          | 4,700,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S0G225K/0.50                | X6S                         | 4V            | 2,200,000        | ± 10%                 | 0.50 ± 0.05    |
| C1608X6S0G225M/0.50                | X6S                         | 4V            | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1608X6S0G475K/0.50                | X6S                         | 4V            | 4,700,000        | ± 10%                 | 0.50 ± 0.05    |
| C1608X6S0G475M/0.50                | X6S                         | 4V            | 4,700,000        | ± 20%                 | 0.50 ± 0.05    |
| C1608X6S0G475K/0.80                | X6S                         | 4V            | 4,700,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S0G475M/0.80                | X6S                         | 4V            | 4,700,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X6S0G106K                     | X6S                         | 4V            | 10,000,000       | ± 10%                 | 0.80 ± 0.10    |
| C1608X6S0G106M                     | X6S                         | 4V            | 10,000,000       | ± 20%                 | 0.80 ± 0.10    |



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608X5R1H104K                     | X5R                         | 50V           | 100,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1H104M                     | X5R                         | 50V           | 100,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1H154K                     | X5R                         | 50V           | 150,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1H154M                     | X5R                         | 50V           | 150,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1H224K                     | X5R                         | 50V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1H224M                     | X5R                         | 50V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1H334K                     | X5R                         | 50V           | 330,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1H334M                     | X5R                         | 50V           | 330,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1H474K                     | X5R                         | 50V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1H474M                     | X5R                         | 50V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1H684K                     | X5R                         | 50V           | 680,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1H684M                     | X5R                         | 50V           | 680,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1H105K                     | X5R                         | 50V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1H105M                     | X5R                         | 50V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1V105K                     | X5R                         | 35V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1V105M                     | X5R                         | 35V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1E154K                     | X5R                         | 25V           | 150,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1E154M                     | X5R                         | 25V           | 150,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1E224K                     | X5R                         | 25V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1E224M                     | X5R                         | 25V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1E334K                     | X5R                         | 25V           | 330,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1E334M                     | X5R                         | 25V           | 330,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1E474K                     | X5R                         | 25V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1E474M                     | X5R                         | 25V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1E105K                     | X5R                         | 25V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1E105M                     | X5R                         | 25V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1E155K                     | X5R                         | 25V           | 1,500,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1E155M                     | X5R                         | 25V           | 1,500,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1E225K                     | X5R                         | 25V           | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1E225M                     | X5R                         | 25V           | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1C224K                     | X5R                         | 16V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C224M                     | X5R                         | 16V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1C334K                     | X5R                         | 16V           | 330,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C334M                     | X5R                         | 16V           | 330,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1C474K                     | X5R                         | 16V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C474M                     | X5R                         | 16V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1C684K                     | X5R                         | 16V           | 680,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C684M                     | X5R                         | 16V           | 680,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1C105K                     | X5R                         | 16V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C105M                     | X5R                         | 16V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1C225K/0.50                | X5R                         | 16V           | 2,200,000        | ± 10%                 | 0.50 ± 0.05    |
| C1608X5R1C225M/0.50                | X5R                         | 16V           | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1608X5R1C225K/0.80                | X5R                         | 16V           | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C225M/0.80                | X5R                         | 16V           | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608X5R1C335K                     | X5R                         | 16V           | 3,300,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C335M                     | X5R                         | 16V           | 3,300,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1C475K                     | X5R                         | 16V           | 4,700,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1C475M                     | X5R                         | 16V           | 4,700,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A224K                     | X5R                         | 10V           | 220,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A224M                     | X5R                         | 10V           | 220,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A334K                     | X5R                         | 10V           | 330,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A334M                     | X5R                         | 10V           | 330,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A474K                     | X5R                         | 10V           | 470,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A474M                     | X5R                         | 10V           | 470,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A684K                     | X5R                         | 10V           | 680,000          | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A684M                     | X5R                         | 10V           | 680,000          | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A105K                     | X5R                         | 10V           | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A105M                     | X5R                         | 10V           | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A225K/0.50                | X5R                         | 10V           | 2,200,000        | ± 10%                 | 0.50 ± 0.05    |
| C1608X5R1A225M/0.50                | X5R                         | 10V           | 2,200,000        | ± 20%                 | 0.50 ± 0.05    |
| C1608X5R1A225K/0.80                | X5R                         | 10V           | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A225M/0.80                | X5R                         | 10V           | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A335K                     | X5R                         | 10V           | 3,300,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A335M                     | X5R                         | 10V           | 3,300,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A475K/0.50                | X5R                         | 10V           | 4,700,000        | ± 10%                 | 0.50 ± 0.05    |
| C1608X5R1A475M/0.50                | X5R                         | 10V           | 4,700,000        | ± 20%                 | 0.50 ± 0.05    |
| C1608X5R1A475K/0.80                | X5R                         | 10V           | 4,700,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A475M/0.80                | X5R                         | 10V           | 4,700,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A685K                     | X5R                         | 10V           | 6,800,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A685M                     | X5R                         | 10V           | 6,800,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R1A106K                     | X5R                         | 10V           | 10,000,000       | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R1A106M                     | X5R                         | 10V           | 10,000,000       | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R0J105K                     | X5R                         | 6.3V          | 1,000,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R0J105M                     | X5R                         | 6.3V          | 1,000,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R0J155K                     | X5R                         | 6.3V          | 1,500,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R0J155M                     | X5R                         | 6.3V          | 1,500,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R0J225K                     | X5R                         | 6.3V          | 2,200,000        | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R0J225M                     | X5R                         | 6.3V          | 2,200,000        | ± 20%                 | 0.80 ± 0.10    |
| C1608X5R0J335K                     | X5R                         | 6.3V          | 3,300,000        | ± 10%                 | 0.80 ± 0.15    |
| C1608X5R0J335M                     | X5R                         | 6.3V          | 3,300,000        | ± 20%                 | 0.80 ± 0.15    |
| C1608X5R0J475K/0.50                | X5R                         | 6.3V          | 4,700,000        | ± 10%                 | 0.50 ± 0.05    |
| C1608X5R0J475M/0.50                | X5R                         | 6.3V          | 4,700,000        | ± 20%                 | 0.50 ± 0.05    |
| C1608X5R0J475K/0.80                | X5R                         | 6.3V          | 4,700,000        | ± 10%                 | 0.80 ± 0.15    |
| C1608X5R0J475M/0.80                | X5R                         | 6.3V          | 4,700,000        | ± 20%                 | 0.80 ± 0.15    |
| C1608X5R0J685K                     | X5R                         | 6.3V          | 6,800,000        | ± 10%                 | 0.80 ± 0.15    |
| C1608X5R0J685M                     | X5R                         | 6.3V          | 6,800,000        | ± 20%                 | 0.80 ± 0.15    |
| C1608X5R0J106K                     | X5R                         | 6.3V          | 10,000,000       | ± 10%                 | 0.80 ± 0.10    |
| C1608X5R0J106M                     | X5R                         | 6.3V          | 10,000,000       | ± 20%                 | 0.80 ± 0.20    |



## Capacitance Range Table

## C1608 [EIA CC0603]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%), Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C1608X5R0G106M                     | X5R                         | 4V            | 10,000,000       | ± 20%                 | 0.80 ± 0.20    |
| C1608Y5V1H104Z                     | Y5V                         | 50V           | 100,000          | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1H224Z                     | Y5V                         | 50V           | 220,000          | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1H474Z                     | Y5V                         | 50V           | 470,000          | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1E104Z                     | Y5V                         | 25V           | 100,000          | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1E224Z                     | Y5V                         | 25V           | 220,000          | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1E474Z                     | Y5V                         | 25V           | 470,000          | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1E105Z                     | Y5V                         | 25V           | 1,000,000        | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1C104Z                     | Y5V                         | 16V           | 100,000          | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1C105Z                     | Y5V                         | 16V           | 1,000,000        | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1C225Z                     | Y5V                         | 16V           | 2,200,000        | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1A105Z                     | Y5V                         | 10V           | 1,000,000        | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V1A225Z                     | Y5V                         | 10V           | 2,200,000        | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V0J475Z                     | Y5V                         | 6.3V          | 4,700,000        | +80/-20%              | 0.80 ± 0.10    |
| C1608Y5V0J106Z                     | Y5V                         | 6.3V          | 10,000,000       | +80/-20%              | 0.80 ± 0.15    |





## Capacitance Range Chart

## C2012 [EIA CC0805]

### Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/°C)  
 Rated Voltage: 50V (1H), 25V (1E)

| Capacitance (pF) | Cap Code | Tolerance | C0G      |          |
|------------------|----------|-----------|----------|----------|
|                  |          |           | 1H (50V) | 1E (25V) |
| 10               | 100      | J: ± 5%   | Standard |          |
| 100              | 101      |           |          |          |
| 120              | 121      |           |          |          |
| 150              | 151      |           |          |          |
| 180              | 181      |           |          |          |
| 220              | 221      |           |          |          |
| 270              | 271      |           |          |          |
| 330              | 331      |           |          |          |
| 390              | 391      |           |          |          |
| 470              | 471      |           |          |          |
| 560              | 561      |           |          |          |
| 680              | 681      |           |          |          |
| 820              | 821      |           |          |          |
| 1,000            | 102      |           |          |          |
| 1,200            | 122      |           |          |          |
| 1,500            | 152      |           |          |          |
| 1,800            | 182      |           |          |          |
| 2,200            | 222      |           |          |          |
| 2,700            | 272      |           |          |          |
| 3,300            | 332      |           |          |          |
| 3,900            | 392      |           |          | Standard |
| 4,700            | 472      |           |          | Standard |
| 5,600            | 562      |           |          | Standard |
| 6,800            | 682      |           |          | Standard |
| 8,200            | 822      |           |          | Standard |
| 10,000           | 103      |           |          | Standard |
| 15,000           | 153      |           |          | Standard |
| 22,000           | 223      |           |          | Standard |
| 33,000           | 333      |           |          | Standard |

• Standard capacitance is shown. Please refer to Capacitance Range Table for additional capacitance values.

### Capacitance Range Chart

Temperature Characteristics: X6S (± 22%)  
 Rated Voltage: 50V (1H), 35V (1V), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V(0G)

| Capacitance (pF) | Cap Code | Tolerance            | X6S      |          |          |          |          |           |         |
|------------------|----------|----------------------|----------|----------|----------|----------|----------|-----------|---------|
|                  |          |                      | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) |
| 1,000,000        | 105      | K: ± 10%<br>M: ± 20% | Standard |          |          |          |          |           |         |
| 2,200,000        | 225      |                      |          |          |          | Standard |          |           |         |
| 4,700,000        | 475      |                      |          |          |          |          |          |           |         |
| 10,000,000       | 106      |                      |          |          |          |          |          |           |         |
| 22,000,000       | 226      |                      |          |          |          |          |          |           |         |
| 47,000,000       | 476      |                      |          |          |          |          |          |           |         |

• Standard thickness is shown. Please refer to Capacitance Range Table for additional thicknesses.

#### Standard Thickness

|  |         |
|--|---------|
|  | 0.60 mm |
|  | 0.85 mm |
|  | 1.25 mm |



## Capacitance Range Chart

## C2012 [EIA CC0805]

### Capacitance Range Chart

Temperature Characteristics: X7R ( $\pm 15\%$ ), X5R ( $\pm 15\%$ ), Y5V (+22/-82%)

Rated Voltage: 50V (1H), 35V (1V), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

| Capacitance (pF) | Cap Code | Tolerance                      | X5R      |          |          |          |           |         |
|------------------|----------|--------------------------------|----------|----------|----------|----------|-----------|---------|
|                  |          |                                | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) |
| 1,000,000        | 105      | K: $\pm 10\%$<br>M: $\pm 20\%$ | █        | █        | █        | █        | █         |         |
| 1,500,000        | 155      |                                |          |          |          |          |           |         |
| 2,200,000        | 225      |                                |          |          |          |          |           |         |
| 3,300,000        | 335      |                                |          |          |          |          |           |         |
| 4,700,000        | 475      |                                |          |          |          |          |           |         |
| 6,800,000        | 685      |                                |          |          |          |          |           |         |
| 10,000,000       | 106      |                                |          |          |          |          |           |         |
| 15,000,000       | 156      |                                |          |          |          |          |           |         |
| 22,000,000       | 226      |                                |          |          | █        | █        |           |         |
| 33,000,000       | 336      |                                |          |          |          |          |           |         |
| 47,000,000       | 476      |                                |          |          |          |          | █         |         |

| Capacitance (pF) | Cap Code | Tolerance                      | X7R      |          |          |          |          |           |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|-----------|
|                  |          |                                | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 1,000            | 102      | K: $\pm 10\%$<br>M: $\pm 20\%$ | █        |          |          |          |          |           |
| 2,200            | 222      |                                |          |          |          |          |          |           |
| 4,700            | 472      |                                |          |          |          |          |          |           |
| 10,000           | 103      |                                |          |          |          |          |          |           |
| 22,000           | 223      |                                |          |          |          |          |          |           |
| 47,000           | 473      |                                |          |          |          |          |          |           |
| 100,000          | 104      |                                |          |          |          | █        |          |           |
| 150,000          | 154      |                                |          |          |          |          |          |           |
| 220,000          | 224      |                                |          |          |          | █        | █        |           |
| 330,000          | 334      |                                |          |          |          |          |          |           |
| 470,000          | 474      |                                |          |          |          |          |          |           |
| 680,000          | 684      |                                |          |          |          |          |          |           |
| 1,000,000        | 105      |                                |          | █        |          |          | █        |           |
| 1,500,000        | 155      |                                |          |          |          |          |          |           |
| 2,200,000        | 225      |                                |          |          |          |          |          |           |
| 3,300,000        | 335      |                                |          |          |          |          |          |           |
| 4,700,000        | 475      |                                |          |          |          |          |          |           |
| 10,000,000       | 106      |                                |          |          |          |          | █        |           |

| Capacitance (pF) | Cap Code | Tolerance   | Y5V      |          |          |          |           |
|------------------|----------|-------------|----------|----------|----------|----------|-----------|
|                  |          |             | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 100,000          | 104      | Z: +80/-20% | █        |          |          |          |           |
| 470,000          | 474      |             |          |          |          |          |           |
| 1,000,000        | 105      |             |          | █        | █        |          |           |
| 2,200,000        | 225      |             |          |          |          |          |           |
| 4,700,000        | 475      |             |          |          |          | █        |           |
| 10,000,000       | 106      |             |          |          |          |          | █         |
| 22,000,000       | 226      |             |          |          |          |          |           |

#### Standard Thickness

|  |         |
|--|---------|
|  | 0.60 mm |
|  | 0.85 mm |
|  | 1.25 mm |

• Standard thickness is shown. Please refer to Capacitance Range Table for additional thicknesses.



## Capacitance Range Table

## C2012 [EIA CC0805]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C2012C0G1H100D                     | C0G                         | 50V           | 10               | ± 0.50pF              | 0.60 ± 0.10    |
| C2012C0G1H101J                     | C0G                         | 50V           | 100              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H121J                     | C0G                         | 50V           | 120              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H151J                     | C0G                         | 50V           | 150              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H181J                     | C0G                         | 50V           | 180              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H221J                     | C0G                         | 50V           | 220              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H271J                     | C0G                         | 50V           | 270              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H331J                     | C0G                         | 50V           | 330              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H391J                     | C0G                         | 50V           | 390              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H471J                     | C0G                         | 50V           | 470              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H561J                     | C0G                         | 50V           | 560              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H681J                     | C0G                         | 50V           | 680              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H821J                     | C0G                         | 50V           | 820              | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H102J                     | C0G                         | 50V           | 1,000            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H122J                     | C0G                         | 50V           | 1,200            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H152J                     | C0G                         | 50V           | 1,500            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H182J/0.60                | C0G                         | 50V           | 1,800            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H182J/0.85                | C0G                         | 50V           | 1,800            | ± 5%                  | 0.85 ± 0.10    |
| C2012C0G1H222J/0.60                | C0G                         | 50V           | 2,200            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H222J/0.85                | C0G                         | 50V           | 2,200            | ± 5%                  | 0.85 ± 0.10    |
| C2012C0G1H272J/0.60                | C0G                         | 50V           | 2,700            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H272J/1.25                | C0G                         | 50V           | 2,700            | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1H332J/0.60                | C0G                         | 50V           | 3,300            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H332J/1.25                | C0G                         | 50V           | 3,300            | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1H392J/0.60                | C0G                         | 50V           | 3,900            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H392J/0.85                | C0G                         | 50V           | 3,900            | ± 5%                  | 0.85 ± 0.10    |
| C2012C0G1H472J/0.60                | C0G                         | 50V           | 4,700            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H472J/0.85                | C0G                         | 50V           | 4,700            | ± 5%                  | 0.85 ± 0.10    |
| C2012C0G1H562J/0.60                | C0G                         | 50V           | 5,600            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H562J/0.85                | C0G                         | 50V           | 5,600            | ± 5%                  | 0.85 ± 0.10    |
| C2012C0G1H682J/0.60                | C0G                         | 50V           | 6,800            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H682J/1.25                | C0G                         | 50V           | 6,800            | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1H822J/0.60                | C0G                         | 50V           | 8,200            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H822J/1.25                | C0G                         | 50V           | 8,200            | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1H103J/0.60                | C0G                         | 50V           | 10,000           | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1H103J/1.25                | C0G                         | 50V           | 10,000           | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1H153J                     | C0G                         | 50V           | 15,000           | ± 5%                  | 0.85 ± 0.10    |
| C2012C0G1H223J                     | C0G                         | 50V           | 22,000           | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1H333J                     | C0G                         | 50V           | 33,000           | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1E392J                     | C0G                         | 25V           | 3,900            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1E472J                     | C0G                         | 25V           | 4,700            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1E562J                     | C0G                         | 25V           | 5,600            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1E682J                     | C0G                         | 25V           | 6,800            | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1E822J                     | C0G                         | 25V           | 8,200            | ± 5%                  | 0.60 ± 0.10    |



## Capacitance Range Table

## C2012 [EIA CC0805]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C2012C0G1E103J                  | C0G                         | 25V           | 10,000           | ± 5%                  | 0.60 ± 0.10    |
| C2012C0G1E153J                  | C0G                         | 25V           | 15,000           | ± 5%                  | 0.85 ± 0.10    |
| C2012C0G1E223J                  | C0G                         | 25V           | 22,000           | ± 5%                  | 1.25 ± 0.20    |
| C2012C0G1E333J                  | C0G                         | 25V           | 33,000           | ± 5%                  | 1.25 ± 0.20    |

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C2012X7R1H102K                  | X7R                         | 50V           | 1,000            | ± 10%                 | 0.60 ± 0.10    |
| C2012X7R1H102M                  | X7R                         | 50V           | 1,000            | ± 20%                 | 0.60 ± 0.10    |
| C2012X7R1H222K                  | X7R                         | 50V           | 2,200            | ± 10%                 | 0.60 ± 0.10    |
| C2012X7R1H222M                  | X7R                         | 50V           | 2,200            | ± 20%                 | 0.60 ± 0.10    |
| C2012X7R1H472K                  | X7R                         | 50V           | 4,700            | ± 10%                 | 0.60 ± 0.10    |
| C2012X7R1H472M                  | X7R                         | 50V           | 4,700            | ± 20%                 | 0.60 ± 0.10    |
| C2012X7R1H103K                  | X7R                         | 50V           | 10,000           | ± 10%                 | 0.60 ± 0.10    |
| C2012X7R1H103M                  | X7R                         | 50V           | 10,000           | ± 20%                 | 0.60 ± 0.10    |
| C2012X7R1H223K/0.60             | X7R                         | 50V           | 22,000           | ± 10%                 | 0.60 ± 0.10    |
| C2012X7R1H223M/0.60             | X7R                         | 50V           | 22,000           | ± 20%                 | 0.60 ± 0.10    |
| C2012X7R1H473K/1.25             | X7R                         | 50V           | 47,000           | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H473M/1.25             | X7R                         | 50V           | 47,000           | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H104K/0.85             | X7R                         | 50V           | 100,000          | ± 10%                 | 0.85 ± 0.10    |
| C2012X7R1H104M/0.85             | X7R                         | 50V           | 100,000          | ± 20%                 | 0.85 ± 0.10    |
| C2012X7R1H104K/1.25             | X7R                         | 50V           | 100,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H104M/1.25             | X7R                         | 50V           | 100,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H154K                  | X7R                         | 50V           | 150,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H154M                  | X7R                         | 50V           | 150,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H224K                  | X7R                         | 50V           | 220,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H224M                  | X7R                         | 50V           | 220,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H334K                  | X7R                         | 50V           | 330,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H334M                  | X7R                         | 50V           | 330,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H474K                  | X7R                         | 50V           | 470,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H474M                  | X7R                         | 50V           | 470,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H684K                  | X7R                         | 50V           | 680,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H684M                  | X7R                         | 50V           | 680,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H105K                  | X7R                         | 50V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H105M                  | X7R                         | 50V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H155K                  | X7R                         | 50V           | 1,500,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H155M                  | X7R                         | 50V           | 1,500,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1H225K                  | X7R                         | 50V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1H225M                  | X7R                         | 50V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1V105K                  | X7R                         | 35V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1V105M                  | X7R                         | 35V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1V225K                  | X7R                         | 35V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1V225M                  | X7R                         | 35V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |



## Capacitance Range Table

## C2012 [EIA CC0805]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C2012X7R1V335K                     | X7R                         | 35V           | 3,300,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1V335M                     | X7R                         | 35V           | 3,300,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1V475K                     | X7R                         | 35V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1V475M                     | X7R                         | 35V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E104K/0.85                | X7R                         | 25V           | 100,000          | ± 10%                 | 0.85 ± 0.10    |
| C2012X7R1E104M/0.85                | X7R                         | 25V           | 100,000          | ± 20%                 | 0.85 ± 0.10    |
| C2012X7R1E104K/1.25                | X7R                         | 25V           | 100,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E104M/1.25                | X7R                         | 25V           | 100,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E224K                     | X7R                         | 25V           | 220,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E224M                     | X7R                         | 25V           | 220,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E334K                     | X7R                         | 25V           | 330,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E334M                     | X7R                         | 25V           | 330,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E474K                     | X7R                         | 25V           | 470,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E474M                     | X7R                         | 25V           | 470,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E684K                     | X7R                         | 25V           | 680,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E684M                     | X7R                         | 25V           | 680,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E105K                     | X7R                         | 25V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E105M                     | X7R                         | 25V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E155K                     | X7R                         | 25V           | 1,500,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E155M                     | X7R                         | 25V           | 1,500,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E225K                     | X7R                         | 25V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E225M                     | X7R                         | 25V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E335K                     | X7R                         | 25V           | 3,300,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E335M                     | X7R                         | 25V           | 3,300,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1E475K                     | X7R                         | 25V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1E475M                     | X7R                         | 25V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C224K                     | X7R                         | 16V           | 220,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C224M                     | X7R                         | 16V           | 220,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C334K/1.25                | X7R                         | 16V           | 330,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C334M/1.25                | X7R                         | 16V           | 330,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C474K                     | X7R                         | 16V           | 470,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C474M                     | X7R                         | 16V           | 470,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C684K                     | X7R                         | 16V           | 680,000          | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C684M                     | X7R                         | 16V           | 680,000          | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C105K/0.85                | X7R                         | 16V           | 1,000,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X7R1C105M/0.85                | X7R                         | 16V           | 1,000,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X7R1C105K/1.25                | X7R                         | 16V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C105M/1.25                | X7R                         | 16V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C155K                     | X7R                         | 16V           | 1,500,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C155M                     | X7R                         | 16V           | 1,500,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C225K                     | X7R                         | 16V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C225M                     | X7R                         | 16V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X7R1C335K                     | X7R                         | 16V           | 3,300,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X7R1C335M                     | X7R                         | 16V           | 3,300,000        | ± 20%                 | 1.25 ± 0.20    |



## Capacitance Range Table

## C2012 [EIA CC0805]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X6S(-55 to 105°C, ±22%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm)   |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|------------------|
| C2012X7R1C475K                     | X7R                         | 16V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R1C475M                     | X7R                         | 16V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X7R1A105K                     | X7R                         | 10V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R1A105M                     | X7R                         | 10V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X7R1A155K                     | X7R                         | 10V           | 1,500,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R1A155M                     | X7R                         | 10V           | 1,500,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X7R1A225K                     | X7R                         | 10V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R1A225M                     | X7R                         | 10V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X7R1A335K                     | X7R                         | 10V           | 3,300,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R1A335M                     | X7R                         | 10V           | 3,300,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X7R1A475K                     | X7R                         | 10V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R1A475M                     | X7R                         | 10V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X7R1A106K                     | X7R                         | 10V           | 10,000,000       | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R1A106M                     | X7R                         | 10V           | 10,000,000       | ± 20%                 | 1.25 ± 0.20      |
| C2012X7R0J106K                     | X7R                         | 6.3V          | 10,000,000       | ± 10%                 | 1.25 ± 0.20      |
| C2012X7R0J106M                     | X7R                         | 6.3V          | 10,000,000       | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1H105K                     | X6S                         | 50V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1H105M                     | X6S                         | 50V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1H225K                     | X6S                         | 50V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1H225M                     | X6S                         | 50V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1H475K                     | X6S                         | 50V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1H475M                     | X6S                         | 50V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1V475K                     | X6S                         | 35V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1V475M                     | X6S                         | 35V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1E225K                     | X6S                         | 25V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1E225M                     | X6S                         | 25V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1E475K                     | X6S                         | 25V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1E475M                     | X6S                         | 25V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1C225K                     | X6S                         | 16V           | 2,200,000        | ± 10%                 | 0.90 +0.05,-0.10 |
| C2012X6S1C225M                     | X6S                         | 16V           | 2,200,000        | ± 20%                 | 0.90 +0.05,-0.10 |
| C2012X6S1C475K                     | X6S                         | 16V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1C475M                     | X6S                         | 16V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1C106K                     | X6S                         | 16V           | 10,000,000       | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1C106M                     | X6S                         | 16V           | 10,000,000       | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S1A106K/0.85                | X6S                         | 10V           | 10,000,000       | ± 10%                 | 0.85 ± 0.10      |
| C2012X6S1A106M/0.85                | X6S                         | 10V           | 10,000,000       | ± 20%                 | 0.85 ± 0.10      |
| C2012X6S1A226K                     | X6S                         | 10V           | 22,000,000       | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S1A226M                     | X6S                         | 10V           | 22,000,000       | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S0J106K                     | X6S                         | 6.3V          | 10,000,000       | ± 10%                 | 0.85 ± 0.10      |
| C2012X6S0J106M                     | X6S                         | 6.3V          | 10,000,000       | ± 20%                 | 0.85 ± 0.10      |
| C2012X6S0J226K                     | X6S                         | 6.3V          | 22,000,000       | ± 10%                 | 1.25 ± 0.20      |
| C2012X6S0J226M                     | X6S                         | 6.3V          | 22,000,000       | ± 20%                 | 1.25 ± 0.20      |
| C2012X6S0G226M                     | X6S                         | 4V            | 22,000,000       | ± 20%                 | 0.85 ± 0.10      |
| C2012X6S0G476M                     | X6S                         | 4V            | 47,000,000       | ± 20%                 | 1.25 ± 0.20      |





## Capacitance Range Table

## C2012 [EIA CC0805]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C2012X5R1H105K                  | X5R                         | 50V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1H105M                  | X5R                         | 50V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1H155K                  | X5R                         | 50V           | 1,500,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1H155M                  | X5R                         | 50V           | 1,500,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1H225K                  | X5R                         | 50V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1H225M                  | X5R                         | 50V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1H335K                  | X5R                         | 50V           | 3,300,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1H335M                  | X5R                         | 50V           | 3,300,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1H475K                  | X5R                         | 50V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1H475M                  | X5R                         | 50V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1E105K/0.85             | X5R                         | 25V           | 1,000,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1E105M/0.85             | X5R                         | 25V           | 1,000,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1E105K/1.25             | X5R                         | 25V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1E105M/1.25             | X5R                         | 25V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1E155K                  | X5R                         | 25V           | 1,500,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1E155M                  | X5R                         | 25V           | 1,500,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1E225K                  | X5R                         | 25V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1E225M                  | X5R                         | 25V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1E475K                  | X5R                         | 25V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1E475M                  | X5R                         | 25V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1E685K                  | X5R                         | 25V           | 6,800,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1E685M                  | X5R                         | 25V           | 6,800,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1E106K                  | X5R                         | 25V           | 10,000,000       | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1E106M                  | X5R                         | 25V           | 10,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1C105K/0.85             | X5R                         | 16V           | 1,000,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1C105M/0.85             | X5R                         | 16V           | 1,000,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1C105K/1.25             | X5R                         | 16V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1C105M/1.25             | X5R                         | 16V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1C225K/0.85             | X5R                         | 16V           | 2,200,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1C225M/0.85             | X5R                         | 16V           | 2,200,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1C225K/1.25             | X5R                         | 16V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1C225M/1.25             | X5R                         | 16V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1C475K/1.25             | X5R                         | 16V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1C475M/1.25             | X5R                         | 16V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1C685K                  | X5R                         | 16V           | 6,800,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1C685M                  | X5R                         | 16V           | 6,800,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1C106K/0.85             | X5R                         | 16V           | 10,000,000       | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1C106M/0.85             | X5R                         | 16V           | 10,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1C106K/1.25             | X5R                         | 16V           | 10,000,000       | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1C106M/1.25             | X5R                         | 16V           | 10,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1C226K                  | X5R                         | 16V           | 22,000,000       | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1C226M                  | X5R                         | 16V           | 22,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1A105K/0.85             | X5R                         | 10V           | 1,000,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1A105M/0.85             | X5R                         | 10V           | 1,000,000        | ± 20%                 | 0.85 ± 0.10    |



## Capacitance Range Table

## C2012 [EIA CC0805]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C2012X5R1A105K/1.25                | X5R                         | 10V           | 1,000,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1A105M/1.25                | X5R                         | 10V           | 1,000,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1A225K/0.85                | X5R                         | 10V           | 2,200,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1A225M/0.85                | X5R                         | 10V           | 2,200,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1A225K/1.25                | X5R                         | 10V           | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1A225M/1.25                | X5R                         | 10V           | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1A335K                     | X5R                         | 10V           | 3,300,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1A335M                     | X5R                         | 10V           | 3,300,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1A475K/0.85                | X5R                         | 10V           | 4,700,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1A475M/0.85                | X5R                         | 10V           | 4,700,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1A475K/1.25                | X5R                         | 10V           | 4,700,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1A475M/1.25                | X5R                         | 10V           | 4,700,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1A106K/0.85                | X5R                         | 10V           | 10,000,000       | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R1A106M/0.85                | X5R                         | 10V           | 10,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1A106K/1.25                | X5R                         | 10V           | 10,000,000       | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1A106M/1.25                | X5R                         | 10V           | 10,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1A156M                     | X5R                         | 10V           | 15,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R1A226M/0.85                | X5R                         | 10V           | 22,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R1A226K/1.25                | X5R                         | 10V           | 22,000,000       | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R1A226M/1.25                | X5R                         | 10V           | 22,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J225K/0.85                | X5R                         | 6.3V          | 2,200,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R0J225M/0.85                | X5R                         | 6.3V          | 2,200,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R0J225K/1.25                | X5R                         | 6.3V          | 2,200,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R0J225M/1.25                | X5R                         | 6.3V          | 2,200,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J335K/1.25                | X5R                         | 6.3V          | 3,300,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R0J335M/1.25                | X5R                         | 6.3V          | 3,300,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J475K/0.85                | X5R                         | 6.3V          | 4,700,000        | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R0J475M/0.85                | X5R                         | 6.3V          | 4,700,000        | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R0J475K/1.25                | X5R                         | 6.3V          | 4,700,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R0J475M/1.25                | X5R                         | 6.3V          | 4,700,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J685K/1.25                | X5R                         | 6.3V          | 6,800,000        | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R0J685M/1.25                | X5R                         | 6.3V          | 6,800,000        | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J106K/0.85                | X5R                         | 6.3V          | 10,000,000       | ± 10%                 | 0.85 ± 0.10    |
| C2012X5R0J106M/0.85                | X5R                         | 6.3V          | 10,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R0J106K/1.25                | X5R                         | 6.3V          | 10,000,000       | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R0J106M/1.25                | X5R                         | 6.3V          | 10,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J156M/0.85                | X5R                         | 6.3V          | 15,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R0J156M/1.25                | X5R                         | 6.3V          | 15,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J226M/0.85                | X5R                         | 6.3V          | 22,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C2012X5R0J226K/1.25                | X5R                         | 6.3V          | 22,000,000       | ± 10%                 | 1.25 ± 0.20    |
| C2012X5R0J226M/1.25                | X5R                         | 6.3V          | 22,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0J336M                     | X5R                         | 6.3V          | 33,000,000       | ± 20%                 | 1.25 ± 0.20    |



## Capacitance Range Table

## C2012 [EIA CC0805]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%), Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C2012X5R0J476M                     | X5R                         | 6.3V          | 47,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012X5R0G476M                     | X5R                         | 4V            | 47,000,000       | ± 20%                 | 1.25 ± 0.20    |
| C2012Y5V1H104Z/0.60                | Y5V                         | 50V           | 100,000          | +80/-20%              | 0.60 ± 0.10    |
| C2012Y5V1H104Z/0.85                | Y5V                         | 50V           | 100,000          | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1H474Z/0.85                | Y5V                         | 50V           | 470,000          | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1H105Z/0.85                | Y5V                         | 50V           | 1,000,000        | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1H105Z/1.25                | Y5V                         | 50V           | 1,000,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1H225Z                     | Y5V                         | 50V           | 2,200,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1E105Z/0.85                | Y5V                         | 25V           | 1,000,000        | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1E105Z/1.25                | Y5V                         | 25V           | 1,000,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1E225Z                     | Y5V                         | 25V           | 2,200,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1E475Z                     | Y5V                         | 25V           | 4,700,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1C105Z/0.85                | Y5V                         | 16V           | 1,000,000        | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1C105Z/1.25                | Y5V                         | 16V           | 1,000,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1C225Z/0.85                | Y5V                         | 16V           | 2,200,000        | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1C225Z/1.25                | Y5V                         | 16V           | 2,200,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1C475Z/0.85                | Y5V                         | 16V           | 4,700,000        | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1C475Z/1.25                | Y5V                         | 16V           | 4,700,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1C106Z                     | Y5V                         | 16V           | 10,000,000       | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1A475Z/0.85                | Y5V                         | 10V           | 4,700,000        | +80/-20%              | 0.85 ± 0.10    |
| C2012Y5V1A475Z/1.25                | Y5V                         | 10V           | 4,700,000        | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V1A106Z                     | Y5V                         | 10V           | 10,000,000       | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V0J106Z                     | Y5V                         | 6.3V          | 10,000,000       | +80/-20%              | 1.25 ± 0.20    |
| C2012Y5V0J226Z                     | Y5V                         | 6.3V          | 22,000,000       | +80/-20%              | 1.25 ± 0.20    |



## Capacitance Range Chart

## C3216 [EIA CC1206]

### Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/°C)  
 Rated Voltage: 50V (1H), 25V (1E), 10V (1A)

| Capacitance (pF) | Cap Code | Tolerance | C0G      |          | SL       |
|------------------|----------|-----------|----------|----------|----------|
|                  |          |           | 1H (50V) | 1E (25V) | 1A (10V) |
| 3,900            | 392      | J: ± 5%   |          |          |          |
| 4,700            | 472      |           |          |          |          |
| 5,600            | 562      |           |          |          |          |
| 6,800            | 682      |           |          |          |          |
| 8,200            | 822      |           |          |          |          |
| 10,000           | 103      |           |          |          |          |
| 15,000           | 153      |           |          |          |          |
| 22,000           | 223      |           |          |          |          |
| 33,000           | 333      |           |          |          |          |
| 47,000           | 473      |           |          |          |          |
| 68,000           | 683      |           |          |          |          |
| 100,000          | 104      |           |          |          |          |
| 220,000          | 224      |           |          |          |          |

### Capacitance Range Chart

Temperature Characteristics: X7R (±15%), X6S (± 22%), X5R (±15%), Y5V (+22/-82)  
 Rated Voltage: 50V (1H), 35V (1V), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V(0G)

| Capacitance (pF) | Cap Code | Tolerance | X5R      |          |          |          |           |         | X6S      |           |         |
|------------------|----------|-----------|----------|----------|----------|----------|-----------|---------|----------|-----------|---------|
|                  |          |           | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) | 1A (10V) | 0J (6.3V) | 0G (4V) |
| 1,000,000        | 105      | K: ± 10%  |          |          |          |          |           |         |          |           |         |
| 2,200,000        | 225      |           |          |          |          |          |           |         |          |           |         |
| 3,300,000        | 335      |           |          |          |          |          |           |         |          |           |         |
| 4,700,000        | 475      |           |          |          |          |          |           |         |          |           |         |
| 6,800,000        | 685      |           |          |          |          |          |           |         |          |           |         |
| 10,000,000       | 106      |           |          |          |          |          |           |         |          |           |         |
| 15,000,000       | 156      |           |          |          |          |          |           |         |          |           |         |
| 22,000,000       | 226      |           |          |          |          |          |           |         |          |           |         |
| 33,000,000       | 336      |           |          |          |          |          |           |         |          |           |         |
| 47,000,000       | 476      |           |          |          |          |          |           |         |          |           |         |
| 100,000,000      | 107      |           |          |          |          |          |           |         |          |           |         |

| Capacitance (pF) | Cap Code | Tolerance | X7R      |          |          |          |          | Y5V      |          |          |          |             |
|------------------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|
|                  |          |           | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V)   |
| 100,000          | 104      | K: ± 10%  |          |          |          |          |          |          |          |          |          |             |
| 220,000          | 224      |           |          |          |          |          |          |          |          |          |          | M: ± 20%    |
| 330,000          | 334      |           |          |          |          |          |          |          |          |          |          | Z: +80/-20% |
| 470,000          | 474      |           |          |          |          |          |          |          |          |          |          |             |
| 680,000          | 684      |           |          |          |          |          |          |          |          |          |          |             |
| 1,000,000        | 105      |           |          |          |          |          |          |          |          |          |          |             |
| 1,500,000        | 155      |           |          |          |          |          |          |          |          |          |          |             |
| 2,200,000        | 225      |           |          |          |          |          |          |          |          |          |          |             |
| 3,300,000        | 335      |           |          |          |          |          |          |          |          |          |          |             |
| 4,700,000        | 475      |           |          |          |          |          |          |          |          |          |          |             |
| 6,800,000        | 685      |           |          |          |          |          |          |          |          |          |          |             |
| 10,000,000       | 106      |           |          |          |          |          |          |          |          |          |          |             |
| 22,000,000       | 226      |           |          |          |          |          |          |          |          |          |          |             |
| 47,000,000       | 476      |           |          |          |          |          |          |          |          |          |          |             |

### Standard Thickness

0.60 mm 0.85 mm 1.15 mm 1.30 mm 1.60 mm

• Standard capacitance and thickness is shown. Please refer to Capacitance Range Table for additional capacitance values and thicknesses.



## Capacitance Range Table

## C3216 [EIA CC1206]

### Class 1 (Temperature Compensating)

Temperature Characteristics: COG (-55 to 125°C, 0±30 ppm/°C), SL (-25 to +85°C, +350/-1000 ppm/°C)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3216C0G1H392J                     | COG                         | 50V           | 3,900            | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H472J/0.60                | COG                         | 50V           | 4,700            | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H472J/0.85                | COG                         | 50V           | 4,700            | ± 5%                  | 0.85 ± 0.10    |
| C3216C0G1H562J/0.60                | COG                         | 50V           | 5,600            | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H562J/0.85                | COG                         | 50V           | 5,600            | ± 5%                  | 0.85 ± 0.10    |
| C3216C0G1H682J/0.60                | COG                         | 50V           | 6,800            | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H822J/0.60                | COG                         | 50V           | 8,200            | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H822J/0.85                | COG                         | 50V           | 8,200            | ± 5%                  | 0.85 ± 0.10    |
| C3216C0G1H822J/1.15                | COG                         | 50V           | 8,200            | ± 5%                  | 1.15 ± 0.10    |
| C3216C0G1H103J/0.60                | COG                         | 50V           | 10,000           | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H103J/1.15                | COG                         | 50V           | 10,000           | ± 5%                  | 1.15 ± 0.10    |
| C3216C0G1H153J/0.60                | COG                         | 50V           | 15,000           | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H153J/1.15                | COG                         | 50V           | 15,000           | ± 5%                  | 1.15 ± 0.10    |
| C3216C0G1H223J/0.60                | COG                         | 50V           | 22,000           | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1H223J/1.15                | COG                         | 50V           | 22,000           | ± 5%                  | 1.15 ± 0.10    |
| C3216C0G1H333J/0.85                | COG                         | 50V           | 33,000           | ± 5%                  | 0.85 ± 0.10    |
| C3216C0G1H333J/1.60                | COG                         | 50V           | 33,000           | ± 5%                  | 1.60 ± 0.30    |
| C3216C0G1H473J                     | COG                         | 50V           | 47,000           | ± 5%                  | 1.15 ± 0.10    |
| C3216C0G1H683J                     | COG                         | 50V           | 68,000           | ± 5%                  | 1.60 ± 0.30    |
| C3216C0G1H104J                     | COG                         | 50V           | 100,000          | ± 5%                  | 1.60 ± 0.30    |
| C3216C0G1E822J                     | COG                         | 25V           | 8,200            | ± 5%                  | 0.60 ± 0.20    |
| C3216C0G1E103J                     | COG                         | 25V           | 10,000           | ± 5%                  | 0.60 ± 0.20    |
| C3216C0G1E153J                     | COG                         | 25V           | 15,000           | ± 5%                  | 0.60 ± 0.20    |
| C3216C0G1E223J                     | COG                         | 25V           | 22,000           | ± 5%                  | 0.60 ± 0.10    |
| C3216C0G1E333J                     | COG                         | 25V           | 33,000           | ± 5%                  | 0.85 ± 0.10    |
| C3216C0G1E473J                     | COG                         | 25V           | 47,000           | ± 5%                  | 1.15 ± 0.10    |
| C3216C0G1E683J                     | COG                         | 25V           | 68,000           | ± 5%                  | 1.60 ± 0.30    |
| C3216C0G1E104J                     | COG                         | 25V           | 100,000          | ± 5%                  | 1.60 ± 0.30    |
| C3216SL1A224J                      | SL                          | 10V           | 220,000          | ± 5%                  | 1.60 ± 0.30    |

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3216X7R1H104K                     | X7R                         | 50V           | 100,000          | ± 10%                 | 0.85 ± 0.10    |
| C3216X7R1H104M                     | X7R                         | 50V           | 100,000          | ± 20%                 | 0.85 ± 0.10    |
| C3216X7R1H224K                     | X7R                         | 50V           | 220,000          | ± 10%                 | 1.15 ± 0.10    |
| C3216X7R1H224M                     | X7R                         | 50V           | 220,000          | ± 20%                 | 1.15 ± 0.10    |
| C3216X7R1H334K                     | X7R                         | 50V           | 330,000          | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1H334M                     | X7R                         | 50V           | 330,000          | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1H474K                     | X7R                         | 50V           | 470,000          | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1H474M                     | X7R                         | 50V           | 470,000          | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1H684K                     | X7R                         | 50V           | 680,000          | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1H684M                     | X7R                         | 50V           | 680,000          | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1H105K                     | X7R                         | 50V           | 1,000,000        | ± 10%                 | 1.60 ± 0.30    |



## Capacitance Range Table

## C3216 [EIA CC1206]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3216X7R1H105M                     | X7R                         | 50V           | 1,000,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1H155K                     | X7R                         | 50V           | 1,500,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1H155M                     | X7R                         | 50V           | 1,500,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1H225K                     | X7R                         | 50V           | 2,200,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1H225M                     | X7R                         | 50V           | 2,200,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1H335K                     | X7R                         | 50V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1H335M                     | X7R                         | 50V           | 3,300,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1V335K                     | X7R                         | 35V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1V475K                     | X7R                         | 35V           | 4,700,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E224K                     | X7R                         | 25V           | 220,000          | ± 10%                 | 1.15 ± 0.10    |
| C3216X7R1E224M                     | X7R                         | 25V           | 220,000          | ± 20%                 | 1.15 ± 0.10    |
| C3216X7R1E334K                     | X7R                         | 25V           | 330,000          | ± 10%                 | 1.15 ± 0.10    |
| C3216X7R1E334M                     | X7R                         | 25V           | 330,000          | ± 20%                 | 1.15 ± 0.10    |
| C3216X7R1E474K/0.85                | X7R                         | 25V           | 470,000          | ± 10%                 | 0.85 ± 0.10    |
| C3216X7R1E474M/0.85                | X7R                         | 25V           | 470,000          | ± 20%                 | 0.85 ± 0.10    |
| C3216X7R1E684K/0.85                | X7R                         | 25V           | 680,000          | ± 10%                 | 0.85 ± 0.10    |
| C3216X7R1E684M/0.85                | X7R                         | 25V           | 680,000          | ± 20%                 | 0.85 ± 0.10    |
| C3216X7R1E105K/0.85                | X7R                         | 25V           | 1,000,000        | ± 10%                 | 0.85 ± 0.10    |
| C3216X7R1E105M/0.85                | X7R                         | 25V           | 1,000,000        | ± 20%                 | 0.85 ± 0.10    |
| C3216X7R1E105K/1.60                | X7R                         | 25V           | 1,000,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E105M/1.60                | X7R                         | 25V           | 1,000,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1E155K                     | X7R                         | 25V           | 1,500,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E155M                     | X7R                         | 25V           | 1,500,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1E225K                     | X7R                         | 25V           | 2,200,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E225M                     | X7R                         | 25V           | 2,200,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1E335K                     | X7R                         | 25V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E335M                     | X7R                         | 25V           | 3,300,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1E475K                     | X7R                         | 25V           | 4,700,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E475M                     | X7R                         | 25V           | 4,700,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1E685K                     | X7R                         | 25V           | 6,800,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E685M                     | X7R                         | 25V           | 6,800,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1E106K                     | X7R                         | 25V           | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1E106M                     | X7R                         | 25V           | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1C474K                     | X7R                         | 16V           | 470,000          | ± 10%                 | 1.15 ± 0.10    |
| C3216X7R1C474M                     | X7R                         | 16V           | 470,000          | ± 20%                 | 1.15 ± 0.10    |
| C3216X7R1C105K/0.85                | X7R                         | 16V           | 1,000,000        | ± 10%                 | 0.85 ± 0.10    |
| C3216X7R1C105M/0.85                | X7R                         | 16V           | 1,000,000        | ± 20%                 | 0.85 ± 0.10    |
| C3216X7R1C105K/1.15                | X7R                         | 16V           | 1,000,000        | ± 10%                 | 1.15 ± 0.10    |
| C3216X7R1C105K/1.30                | X7R                         | 16V           | 1,000,000        | ± 10%                 | 1.30 ± 0.15    |
| C3216X7R1C225K/1.60                | X7R                         | 16V           | 2,200,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1C225M/1.60                | X7R                         | 16V           | 2,200,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1C335K/1.60                | X7R                         | 16V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1C335M/1.60                | X7R                         | 16V           | 3,300,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1C475K/1.60                | X7R                         | 16V           | 4,700,000        | ± 10%                 | 1.60 ± 0.30    |





## Capacitance Range Table

## C3216 [EIA CC1206]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X6S(-55 to 105°C, ±22%), X5R (-55 to +85°C, ±15%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3216X7R1C475M/1.60                | X7R                         | 16V           | 4,700,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1C685K                     | X7R                         | 16V           | 6,800,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1C685M                     | X7R                         | 16V           | 6,800,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1C106K                     | X7R                         | 16V           | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1C106M                     | X7R                         | 16V           | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X7R1A106K                     | X7R                         | 10V           | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X7R1A106M                     | X7R                         | 10V           | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X6S1A476M                     | X6S                         | 10V           | 47,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X6S0J476M                     | X6S                         | 6.3V          | 47,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X6S0G107M                     | X6S                         | 4V            | 100,000,000      | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1H105K                     | X5R                         | 50V           | 1,000,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1H105M                     | X5R                         | 50V           | 1,000,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1H335K                     | X5R                         | 50V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1H335M                     | X5R                         | 50V           | 3,300,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1H475K                     | X5R                         | 50V           | 4,700,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1H475M                     | X5R                         | 50V           | 4,700,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1H685K                     | X5R                         | 50V           | 6,800,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1H685M                     | X5R                         | 50V           | 6,800,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1H106K                     | X5R                         | 50V           | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1H106M                     | X5R                         | 50V           | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1E225K                     | X5R                         | 25V           | 2,200,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1E225M                     | X5R                         | 25V           | 2,200,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1E335K/1.60                | X5R                         | 25V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1E335M/1.60                | X5R                         | 25V           | 3,300,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1E475K                     | X5R                         | 25V           | 4,700,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1E475M                     | X5R                         | 25V           | 4,700,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1E106K                     | X5R                         | 25V           | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1E106M                     | X5R                         | 25V           | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1E226M                     | X5R                         | 25V           | 22,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C225K/1.60                | X5R                         | 16V           | 2,200,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1C225M/1.60                | X5R                         | 16V           | 2,200,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C335K/1.60                | X5R                         | 16V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1C335M/1.60                | X5R                         | 16V           | 3,300,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C475K/1.15                | X5R                         | 16V           | 4,700,000        | ± 10%                 | 1.15 ± 0.10    |
| C3216X5R1C475M/1.15                | X5R                         | 16V           | 4,700,000        | ± 20%                 | 1.15 ± 0.10    |
| C3216X5R1C475K/1.60                | X5R                         | 16V           | 4,700,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1C475M/1.60                | X5R                         | 16V           | 4,700,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C685K                     | X5R                         | 16V           | 6,800,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1C685M                     | X5R                         | 16V           | 6,800,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C106K                     | X5R                         | 16V           | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1C106M                     | X5R                         | 16V           | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C226M                     | X5R                         | 16V           | 22,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C336M                     | X5R                         | 16V           | 33,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1C476M                     | X5R                         | 16V           | 47,000,000       | ± 20%                 | 1.60 ± 0.30    |



## Capacitance Range Table

## C3216 [EIA CC1206]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%), Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3216X5R1A225K/0.85                | X5R                         | 10V           | 2,200,000        | ± 10%                 | 0.85 ± 0.10    |
| C3216X5R1A225M/0.85                | X5R                         | 10V           | 2,200,000        | ± 20%                 | 0.85 ± 0.10    |
| C3216X5R1A335K/0.85                | X5R                         | 10V           | 3,300,000        | ± 10%                 | 0.85 ± 0.10    |
| C3216X5R1A335M/0.85                | X5R                         | 10V           | 3,300,000        | ± 20%                 | 0.85 ± 0.10    |
| C3216X5R1A335K/1.15                | X5R                         | 10V           | 3,300,000        | ± 10%                 | 1.15 ± 0.10    |
| C3216X5R1A335M/1.15                | X5R                         | 10V           | 3,300,000        | ± 20%                 | 1.15 ± 0.10    |
| C3216X5R1A475K                     | X5R                         | 10V           | 4,700,000        | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1A475M                     | X5R                         | 10V           | 4,700,000        | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1A106K                     | X5R                         | 10V           | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R1A106M                     | X5R                         | 10V           | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1A226M                     | X5R                         | 10V           | 22,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1A336M                     | X5R                         | 10V           | 33,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1A476M                     | X5R                         | 10V           | 47,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R1A107M                     | X5R                         | 10V           | 100,000,000      | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R0J106K/0.85                | X5R                         | 6.3V          | 10,000,000       | ± 10%                 | 0.85 ± 0.10    |
| C3216X5R0J106M/0.85                | X5R                         | 6.3V          | 10,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C3216X5R0J106K/1.60                | X5R                         | 6.3V          | 10,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R0J106M/1.60                | X5R                         | 6.3V          | 10,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R0J156M                     | X5R                         | 6.3V          | 15,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R0J226M/0.85                | X5R                         | 6.3V          | 22,000,000       | ± 20%                 | 0.85 ± 0.10    |
| C3216X5R0J226K/1.60                | X5R                         | 6.3V          | 22,000,000       | ± 10%                 | 1.60 ± 0.30    |
| C3216X5R0J226M/1.60                | X5R                         | 6.3V          | 22,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R0J336M                     | X5R                         | 6.3V          | 33,000,000       | ± 20%                 | 1.30 ± 0.15    |
| C3216X5R0J476M                     | X5R                         | 6.3V          | 47,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R0J107M                     | X5R                         | 6.3V          | 100,000,000      | ± 20%                 | 1.60 ± 0.30    |
| C3216X5R0G107M                     | X5R                         | 4V            | 100,000,000      | ± 20%                 | 1.60 ± 0.30    |
| C3216Y5V1H225Z/0.85                | Y5V                         | 50V           | 2,200,000        | +80/-20%              | 0.85 ± 0.10    |
| C3216Y5V1H225Z/1.15                | Y5V                         | 50V           | 2,200,000        | +80/-20%              | 1.15 ± 0.10    |
| C3216Y5V1H475Z                     | Y5V                         | 50V           | 4,700,000        | +80/-20%              | 1.60 ± 0.30    |
| C3216Y5V1E475Z/0.85                | Y5V                         | 25V           | 4,700,000        | +80/-20%              | 0.85 ± 0.10    |
| C3216Y5V1E475Z/1.15                | Y5V                         | 25V           | 4,700,000        | +80/-20%              | 1.15 ± 0.10    |
| C3216Y5V1E106Z                     | Y5V                         | 25V           | 10,000,000       | +80/-20%              | 1.60 ± 0.30    |
| C3216Y5V1C475Z/0.85                | Y5V                         | 16V           | 4,700,000        | +80/-20%              | 0.85 ± 0.10    |
| C3216Y5V1C475Z/1.15                | Y5V                         | 16V           | 4,700,000        | +80/-20%              | 1.15 ± 0.10    |
| C3216Y5V1C475Z/1.30                | Y5V                         | 16V           | 4,700,000        | +80/-20%              | 1.30 ± 0.15    |
| C3216Y5V1C106Z                     | Y5V                         | 16V           | 10,000,000       | +80/-20%              | 1.60 ± 0.30    |
| C3216Y5V1C226Z                     | Y5V                         | 16V           | 22,000,000       | +80/-20%              | 1.60 ± 0.30    |
| C3216Y5V1A106Z/0.85                | Y5V                         | 10V           | 10,000,000       | +80/-20%              | 0.85 ± 0.10    |
| C3216Y5V1A106Z/1.15                | Y5V                         | 10V           | 10,000,000       | +80/-20%              | 1.15 ± 0.10    |
| C3216Y5V1A226Z                     | Y5V                         | 10V           | 22,000,000       | +80/-20%              | 1.60 ± 0.30    |
| C3216Y5V0J476Z                     | Y5V                         | 6.3V          | 47,000,000       | +80/-20%              | 1.60 ± 0.30    |



## Capacitance Range Chart

## C3225 [EIA CC1210]

### Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/°C)  
 Rated Voltage: 50V (1H)

| Capacitance (pF) | Cap Code | Tolerance | C0G      |
|------------------|----------|-----------|----------|
|                  |          |           | 1H (50V) |
| 22,000           | 223      | J: ± 5%   |          |
| 33,000           | 333      |           |          |
| 47,000           | 473      |           |          |
| 68,000           | 683      |           |          |
| 100,000          | 104      |           |          |

### Capacitance Range Chart

Temperature Characteristics: X7R (±15%), X7S (±22%), X5R (±15%), X6S (±22%), Y5V (+22/-82%)  
 Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

| Capacitance (pF) | Cap Code | Tolerance | X5R      |          |          |          |           | X6S      |           |         |
|------------------|----------|-----------|----------|----------|----------|----------|-----------|----------|-----------|---------|
|                  |          |           | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 1H (50V) | 0J (6.3V) | 0G (4V) |
| 4,700,000        | 475      | K: ± 10%  |          |          |          |          |           |          |           |         |
| 10,000,000       | 106      |           | M: ± 20% |          |          |          |           |          |           |         |
| 15,000,000       | 156      |           |          |          |          |          |           |          |           |         |
| 22,000,000       | 226      |           |          |          |          |          |           |          |           |         |
| 33,000,000       | 336      |           |          |          |          |          |           |          |           |         |
| 47,000,000       | 476      |           |          |          |          |          |           |          |           |         |
| 68,000,000       | 686      |           |          |          |          |          |           |          |           |         |
| 100,000,000      | 107      |           |          |          |          |          |           |          |           |         |

| Capacitance (pF) | Cap Code | Tolerance | X7R      |          |          |          | X7S      |
|------------------|----------|-----------|----------|----------|----------|----------|----------|
|                  |          |           | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 1H (50V) |
| 470,000          | 474      | K: ± 10%  |          |          |          |          |          |
| 1,000,000        | 105      |           | M: ± 20% |          |          |          |          |
| 1,500,000        | 155      |           |          |          |          |          |          |
| 2,200,000        | 225      |           |          |          |          |          |          |
| 3,300,000        | 335      |           |          |          |          |          |          |
| 4,700,000        | 475      |           |          |          |          |          |          |
| 6,800,000        | 685      |           |          |          |          |          |          |
| 10,000,000       | 106      |           |          |          |          |          |          |
| 15,000,000       | 156      |           |          |          |          |          |          |
| 22,000,000       | 226      |           |          |          |          |          |          |

| Capacitance (pF) | Cap Code | Tolerance   | Y5V      |          |          |          |           |
|------------------|----------|-------------|----------|----------|----------|----------|-----------|
|                  |          |             | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 4,700,000        | 475      | Z: +80/-20% |          |          |          |          |           |
| 10,000,000       | 106      |             |          |          |          |          |           |
| 22,000,000       | 226      |             |          |          |          |          |           |
| 47,000,000       | 476      |             |          |          |          |          |           |
| 100,000,000      | 107      |             |          |          |          |          |           |

### Standard Thickness

• Standard capacitance and thickness is shown. Please refer to Capacitance Range Table for additional capacitance values and thicknesses.



## Capacitance Range Table

## C3225 [EIA CC1210]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3225C0G1H223J                  | C0G                         | 50V           | 22,000           | ± 5%                  | 1.30 ± 0.15    |
| C3225C0G1H333J                  | C0G                         | 50V           | 33,000           | ± 5%                  | 1.60 ± 0.30    |
| C3225C0G1H473J                  | C0G                         | 50V           | 47,000           | ± 5%                  | 2.00 ± 0.20    |
| C3225C0G1H683J                  | C0G                         | 50V           | 68,000           | ± 5%                  | 2.00 ± 0.20    |
| C3225C0G1H104J                  | C0G                         | 50V           | 100,000          | ± 5%                  | 2.50 ± 0.30    |

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X7S (-55 to +125°C, ±22%), X6S (-55 to +105°C, ±22%)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3225X7R1H474K/1.30             | X7R                         | 50V           | 470,000          | ± 10%                 | 1.30 ± 0.15    |
| C3225X7R1H474M/1.30             | X7R                         | 50V           | 470,000          | ± 20%                 | 1.30 ± 0.15    |
| C3225X7R1H105K/1.60             | X7R                         | 50V           | 1,000,000        | ± 10%                 | 1.60 ± 0.30    |
| C3225X7R1H105M/1.60             | X7R                         | 50V           | 1,000,000        | ± 20%                 | 1.60 ± 0.30    |
| C3225X7R1H105K/2.00             | X7R                         | 50V           | 1,000,000        | ± 10%                 | 2.00 ± 0.20    |
| C3225X7R1H105M/2.00             | X7R                         | 50V           | 1,000,000        | ± 20%                 | 2.00 ± 0.20    |
| C3225X7R1H155K                  | X7R                         | 50V           | 1,500,000        | ± 10%                 | 2.00 ± 0.20    |
| C3225X7R1H155M                  | X7R                         | 50V           | 1,500,000        | ± 20%                 | 2.00 ± 0.20    |
| C3225X7R1H225K/2.00             | X7R                         | 50V           | 2,200,000        | ± 10%                 | 2.00 ± 0.20    |
| C3225X7R1H225M/2.00             | X7R                         | 50V           | 2,200,000        | ± 20%                 | 2.00 ± 0.20    |
| C3225X7R1H225K/2.50             | X7R                         | 50V           | 2,200,000        | ± 10%                 | 2.50 ± 0.30    |
| C3225X7R1H225M/2.50             | X7R                         | 50V           | 2,200,000        | ± 20%                 | 2.50 ± 0.30    |
| C3225X7R1H335K                  | X7R                         | 50V           | 3,300,000        | ± 10%                 | 2.50 ± 0.30    |
| C3225X7R1H335M                  | X7R                         | 50V           | 3,300,000        | ± 20%                 | 2.50 ± 0.30    |
| C3225X7R1H475K                  | X7R                         | 50V           | 4,700,000        | ± 10%                 | 2.50 ± 0.30    |
| C3225X7R1H475M                  | X7R                         | 50V           | 4,700,000        | ± 20%                 | 2.50 ± 0.30    |
| C3225X6S1H475K                  | X6S                         | 50V           | 4,700,000        | ± 10%                 | 2.50 ± 0.30    |
| C3225X6S1H475M                  | X6S                         | 50V           | 4,700,000        | ± 20%                 | 2.50 ± 0.30    |
| C3225X7S1H685K                  | X7S                         | 50V           | 6,800,000        | ± 10%                 | 2.50 ± 0.30    |
| C3225X7S1H685M                  | X7S                         | 50V           | 6,800,000        | ± 20%                 | 2.50 ± 0.30    |
| C3225X7S1H106K                  | X7S                         | 50V           | 10,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C3225X7S1H106M                  | X7S                         | 50V           | 10,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X7R1E225K/1.60             | X7R                         | 25V           | 2,200,000        | ± 10%                 | 1.60 ± 0.30    |
| C3225X7R1E225M/1.60             | X7R                         | 25V           | 2,200,000        | ± 20%                 | 1.60 ± 0.30    |
| C3225X7R1E335K                  | X7R                         | 25V           | 3,300,000        | ± 10%                 | 1.60 ± 0.30    |
| C3225X7R1E335M                  | X7R                         | 25V           | 3,300,000        | ± 20%                 | 1.60 ± 0.30    |
| C3225X7R1E475K                  | X7R                         | 25V           | 4,700,000        | ± 10%                 | 2.00 ± 0.20    |
| C3225X7R1E475M                  | X7R                         | 25V           | 4,700,000        | ± 20%                 | 2.00 ± 0.20    |
| C3225X7R1E685K/2.50             | X7R                         | 25V           | 6,800,000        | ± 10%                 | 2.50 ± 0.30    |
| C3225X7R1E685M/2.50             | X7R                         | 25V           | 6,800,000        | ± 20%                 | 2.50 ± 0.30    |
| C3225X7R1E106K                  | X7R                         | 25V           | 10,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C3225X7R1E106M                  | X7R                         | 25V           | 10,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X7R1C106K                  | X7R                         | 16V           | 10,000,000       | ± 10%                 | 2.00 ± 0.20    |
| C3225X7R1C106M                  | X7R                         | 16V           | 10,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C3225X7R1C156M                  | X7R                         | 16V           | 15,000,000       | ± 20%                 | 2.50 ± 0.30    |



## Capacitance Range Table

## C3225 [EIA CC1210]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X6S (-55 to +105°C, ±22%), X5R (-55 to +85°C, ±15%), Y5V (-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3225X7R1C226K                     | X7R                         | 16V           | 22,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C3225X7R1C226M                     | X7R                         | 16V           | 22,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X7R1A226K/2.30                | X7R                         | 10V           | 22,000,000       | ± 10%                 | 2.30 ± 0.20    |
| C3225X7R1A226M/2.30                | X7R                         | 10V           | 22,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C3225X5R1H475K                     | X5R                         | 50V           | 4,700,000        | ± 10%                 | 2.50 ± 0.30    |
| C3225X5R1H475M                     | X5R                         | 50V           | 4,700,000        | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R1E106K                     | X5R                         | 25V           | 10,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C3225X5R1E106M                     | X5R                         | 25V           | 10,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R1C106K                     | X5R                         | 16V           | 10,000,000       | ± 10%                 | 2.00 ± 0.20    |
| C3225X5R1C106M                     | X5R                         | 16V           | 10,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C3225X5R1C156M                     | X5R                         | 16V           | 15,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R1C226K                     | X5R                         | 16V           | 22,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C3225X5R1C226M                     | X5R                         | 16V           | 22,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R1A106K                     | X5R                         | 10V           | 10,000,000       | ± 10%                 | 2.00 ± 0.20    |
| C3225X5R1A106M                     | X5R                         | 10V           | 10,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C3225X5R1A156M/2.30                | X5R                         | 10V           | 15,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C3225X5R1A226M                     | X5R                         | 10V           | 22,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C3225X5R1A336M                     | X5R                         | 10V           | 33,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C3225X5R1A476M                     | X5R                         | 10V           | 47,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R0J226M/1.60                | X5R                         | 6.3V          | 22,000,000       | ± 20%                 | 1.60 ± 0.30    |
| C3225X5R0J226K/2.00                | X5R                         | 6.3V          | 22,000,000       | ± 10%                 | 2.00 ± 0.20    |
| C3225X5R0J226M/2.00                | X5R                         | 6.3V          | 22,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C3225X5R0J226K/2.50                | X5R                         | 6.3V          | 22,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C3225X5R0J226M/2.50                | X5R                         | 6.3V          | 22,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R0J336M/2.00                | X5R                         | 6.3V          | 33,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C3225X5R0J336M/2.50                | X5R                         | 6.3V          | 33,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R0J476M                     | X5R                         | 6.3V          | 47,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X5R0J686M                     | X5R                         | 6.3V          | 68,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C3225X5R0J107M                     | X5R                         | 6.3V          | 100,000,000      | ± 20%                 | 2.50 ± 0.30    |
| C3225X6S0J476M                     | X6S                         | 6.3V          | 47,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C3225X6S0J107M                     | X6S                         | 6.3V          | 100,000,000      | ± 20%                 | 2.50 ± 0.30    |
| C3225X6S0G107M                     | X6S                         | 4V            | 100,000,000      | ± 20%                 | 2.50 ± 0.30    |
| C3225Y5V1H475Z/1.15                | Y5V                         | 50V           | 4,700,000        | +80/-20%              | 1.15 ± 0.10    |
| C3225Y5V1H475Z/1.60                | Y5V                         | 50V           | 4,700,000        | +80/-20%              | 1.60 ± 0.30    |
| C3225Y5V1H106Z                     | Y5V                         | 50V           | 10,000,000       | +80/-20%              | 1.60 ± 0.30    |
| C3225Y5V1E106Z/1.30                | Y5V                         | 25V           | 10,000,000       | +80/-20%              | 1.30 ± 0.15    |
| C3225Y5V1E106Z/1.60                | Y5V                         | 25V           | 10,000,000       | +80/-20%              | 1.60 ± 0.30    |
| C3225Y5V1E226Z                     | Y5V                         | 25V           | 22,000,000       | +80/-20%              | 2.00 ± 0.20    |
| C3225Y5V1C106Z/1.15                | Y5V                         | 16V           | 10,000,000       | +80/-20%              | 1.15 ± 0.10    |
| C3225Y5V1C106Z/1.60                | Y5V                         | 16V           | 10,000,000       | +80/-20%              | 1.60 ± 0.30    |
| C3225Y5V1C226Z/1.30                | Y5V                         | 16V           | 22,000,000       | +80/-20%              | 1.30 ± 0.15    |
| C3225Y5V1C226Z/2.00                | Y5V                         | 16V           | 22,000,000       | +80/-20%              | 2.00 ± 0.20    |
| C3225Y5V1C476Z                     | Y5V                         | 16V           | 47,000,000       | +80/-20%              | 2.30 ± 0.20    |
| C3225Y5V1A226Z/1.15                | Y5V                         | 10V           | 22,000,000       | +80/-20%              | 1.15 ± 0.10    |



## Capacitance Range Table

# C3225 [EIA CC1210]

### Class 2 (Temperature Stable)

Temperature Characteristics: Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C3225Y5V1A476Z                     | Y5V                         | 10V           | 47,000,000       | +80/-20%              | 2.00 ± 0.20    |
| C3225Y5V0J107Z                     | Y5V                         | 6.3V          | 100,000,000      | +80/-20%              | 2.50 ± 0.30    |





## Capacitance Range Chart

## C4532 [EIA CC1812]

### Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/°C)  
 Rated Voltage: 50V (1H)

| Capacitance (pF) | Cap Code | Tolerance | C0G      |
|------------------|----------|-----------|----------|
|                  |          |           | 1H (50V) |
| 47,000           | 473      | J: ± 5%   |          |
| 68,000           | 683      |           |          |
| 100,000          | 104      |           |          |
| 150,000          | 154      |           |          |
| 220,000          | 224      |           |          |

### Capacitance Range Chart

Temperature Characteristics: X7R (±15%), X5R (±15%), Y5V (+22/-82%)  
 Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

| Capacitance (pF) | Cap Code | Tolerance            | X7R      |          |          | X5R      |          |          |           |
|------------------|----------|----------------------|----------|----------|----------|----------|----------|----------|-----------|
|                  |          |                      | 1H (50V) | 1E (25V) | 1C (16V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 1,000,000        | 105      | K: ± 10%<br>M: ± 20% |          |          |          |          |          |          |           |
| 1,500,000        | 155      |                      |          |          |          |          |          |          |           |
| 2,200,000        | 225      |                      |          |          |          |          |          |          |           |
| 3,300,000        | 335      |                      |          |          |          |          |          |          |           |
| 4,700,000        | 475      |                      |          |          |          |          |          |          |           |
| 6,800,000        | 685      |                      |          |          |          |          |          |          |           |
| 10,000,000       | 106      |                      |          |          |          |          |          |          |           |
| 15,000,000       | 156      |                      |          |          |          |          |          |          |           |
| 22,000,000       | 226      |                      |          |          |          |          |          |          |           |
| 33,000,000       | 336      |                      |          |          |          |          |          |          |           |
| 47,000,000       | 476      |                      |          |          |          |          |          |          |           |
| 68,000,000       | 686      |                      |          |          |          |          |          |          |           |
| 100,000,000      | 107      |                      |          |          |          |          |          |          |           |

| Capacitance (pF) | Cap Code | Tolerance   | Y5V      |          |          |          |
|------------------|----------|-------------|----------|----------|----------|----------|
|                  |          |             | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) |
| 10,000,000       | 106      | Z: +80/-20% |          |          |          |          |
| 22,000,000       | 226      |             |          |          |          |          |
| 47,000,000       | 476      |             |          |          |          |          |
| 100,000,000      | 107      |             |          |          |          |          |

### Standard Thickness

1.60 mm  
 2.00 mm  
 2.30 mm  
 2.50 mm  
 2.80 mm  
 3.20 mm

• Standard capacitance and thickness is shown. Please refer to Capacitance Range Table for additional capacitance values and thicknesses.



## Capacitance Range Table

# C4532 [EIA CC1812]

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to 125°C, 0±30 ppm/°C)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C4532C0G1H473J                  | C0G                         | 50V           | 47,000           | ± 5%                  | 1.60 ± 0.30    |
| C4532C0G1H683J                  | C0G                         | 50V           | 68,000           | ± 5%                  | 1.60 ± 0.30    |
| C4532C0G1H104J                  | C0G                         | 50V           | 100,000          | ± 5%                  | 2.00 ± 0.20    |
| C4532C0G1H154J                  | C0G                         | 50V           | 150,000          | ± 5%                  | 2.50 ± 0.30    |
| C4532C0G1H224J                  | C0G                         | 50V           | 220,000          | ± 5%                  | 3.20 ± 0.30    |

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X5R (-55 to +85°C, ±15%)

| TDK Part Number (Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|---------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C4532X7R1H105K                  | X7R                         | 50V           | 1,000,000        | ± 10%                 | 1.60 ± 0.30    |
| C4532X7R1H105M                  | X7R                         | 50V           | 1,000,000        | ± 20%                 | 1.60 ± 0.30    |
| C4532X7R1H155K/1.60             | X7R                         | 50V           | 1,500,000        | ± 10%                 | 1.60 ± 0.30    |
| C4532X7R1H155M/1.60             | X7R                         | 50V           | 1,500,000        | ± 20%                 | 1.60 ± 0.30    |
| C4532X7R1H225K                  | X7R                         | 50V           | 2,200,000        | ± 10%                 | 1.60 ± 0.30    |
| C4532X7R1H225M                  | X7R                         | 50V           | 2,200,000        | ± 20%                 | 1.60 ± 0.30    |
| C4532X7R1H335K                  | X7R                         | 50V           | 3,300,000        | ± 10%                 | 2.00 ± 0.20    |
| C4532X7R1H335M                  | X7R                         | 50V           | 3,300,000        | ± 20%                 | 2.00 ± 0.20    |
| C4532X7R1H475K/2.00             | X7R                         | 50V           | 4,700,000        | ± 10%                 | 2.00 ± 0.20    |
| C4532X7R1H475M/2.00             | X7R                         | 50V           | 4,700,000        | ± 20%                 | 2.00 ± 0.20    |
| C4532X7R1H685K                  | X7R                         | 50V           | 6,800,000        | ± 10%                 | 2.50 ± 0.30    |
| C4532X7R1H685M                  | X7R                         | 50V           | 6,800,000        | ± 20%                 | 2.50 ± 0.30    |
| C4532X7R1E475M/2.00             | X7R                         | 25V           | 4,700,000        | ± 20%                 | 2.00 ± 0.20    |
| C4532X7R1E106K                  | X7R                         | 25V           | 10,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C4532X7R1E106M                  | X7R                         | 25V           | 10,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C4532X7R1E156M/2.80             | X7R                         | 25V           | 15,000,000       | ± 20%                 | 2.80 ± 0.30    |
| C4532X7R1E226M                  | X7R                         | 25V           | 22,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C4532X7R1C106K                  | X7R                         | 16V           | 10,000,000       | ± 10%                 | 2.30 ± 0.20    |
| C4532X7R1C106M                  | X7R                         | 16V           | 10,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C4532X7R1C226M/2.00             | X7R                         | 16V           | 22,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C4532X7R1C226M/2.30             | X7R                         | 16V           | 22,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C4532X7R1C336M                  | X7R                         | 16V           | 33,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C4532X5R1E106K                  | X5R                         | 25V           | 10,000,000       | ± 10%                 | 2.50 ± 0.30    |
| C4532X5R1E106M                  | X5R                         | 25V           | 10,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C4532X5R1E156M/2.80             | X5R                         | 25V           | 15,000,000       | ± 20%                 | 2.80 ± 0.30    |
| C4532X5R1E226M                  | X5R                         | 25V           | 22,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C4532X5R1C226M/2.00             | X5R                         | 16V           | 22,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C4532X5R1C226M/2.30             | X5R                         | 16V           | 22,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C4532X5R1C336M                  | X5R                         | 16V           | 33,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C4532X5R1A226M                  | X5R                         | 10V           | 22,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C4532X5R1A336M                  | X5R                         | 10V           | 33,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C4532X5R1A476M                  | X5R                         | 10V           | 47,000,000       | ± 20%                 | 2.80 ± 0.30    |
| C4532X5R1A107M                  | X5R                         | 10V           | 100,000,000      | ± 20%                 | 2.80 ± 0.30    |
| C4532X5R0J476M                  | X5R                         | 6.3V          | 47,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C4532X5R0J686M                  | X5R                         | 6.3V          | 68,000,000       | ± 20%                 | 2.80 ± 0.30    |



## Capacitance Range Table

# C4532 [EIA CC1812]

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85°C, ±15%), Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C4532X5R0J107M                     | X5R                         | 6.3V          | 100,000,000      | ± 20%                 | 2.80 ± 0.30    |
| C4532Y5V1H106Z                     | Y5V                         | 50V           | 10,000,000       | +80/-20%              | 2.00 ± 0.20    |
| C4532Y5V1E226Z                     | Y5V                         | 25V           | 22,000,000       | +80/-20%              | 2.00 ± 0.20    |
| C4532Y5V1C476Z                     | Y5V                         | 16V           | 47,000,000       | +80/-20%              | 2.50 ± 0.30    |
| C4532Y5V1A107Z                     | Y5V                         | 10V           | 100,000,000      | +80/-20%              | 2.50 ± 0.30    |



## Capacitance Range Chart

## C5750 [EIA CC2220]

### Capacitance Range Chart

Temperature Characteristics: X7R ( $\pm 15\%$ ), X5R ( $\pm 15\%$ ), Y5V (+22/-82%)  
 Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

| Capacitance (pF) | Cap Code | Tolerance                      | X7R      |          |          | X5R      |          |          |          |           |
|------------------|----------|--------------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|
|                  |          |                                | 1H (50V) | 1E (25V) | 1C (16V) | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 4,700,000        | 475      | K: $\pm 10\%$<br>M: $\pm 20\%$ |          |          |          |          |          |          |          |           |
| 6,800,000        | 685      |                                |          |          |          |          |          |          |          |           |
| 10,000,000       | 106      |                                |          |          |          |          |          |          |          |           |
| 15,000,000       | 156      |                                |          |          |          |          |          |          |          |           |
| 22,000,000       | 226      |                                |          |          |          |          |          |          |          |           |
| 33,000,000       | 336      |                                |          |          |          |          |          |          |          |           |
| 47,000,000       | 476      |                                |          |          |          |          |          |          |          |           |
| 68,000,000       | 686      |                                |          |          |          |          |          |          |          |           |
| 100,000,000      | 107      |                                |          |          |          |          |          |          |          |           |

| Capacitance (pF) | Cap Code | Tolerance   | Y5V      |          |          |          |
|------------------|----------|-------------|----------|----------|----------|----------|
|                  |          |             | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) |
| 10,000,000       | 106      | Z: +80/-20% |          |          |          |          |
| 22,000,000       | 226      |             |          |          |          |          |
| 47,000,000       | 476      |             |          |          |          |          |
| 100,000,000      | 107      |             |          |          |          |          |

### Standard Thickness

2.00 mm  
 2.30 mm  
 2.50 mm  
 2.80 mm



## Capacitance Range Table

# C5750 [EIA CC2220]

### Class 2 (Temperature Stable)

Temperature Characteristics: X7R (-55 to +125°C, ±15%), X5R (-55 to +85°C, ±15%), Y5V(-30 to +85°C, +22/-82%)

| TDK Part Number<br>(Ordering Code) | Temperature Characteristics | Rated Voltage | Capacitance (pF) | Capacitance Tolerance | Thickness (mm) |
|------------------------------------|-----------------------------|---------------|------------------|-----------------------|----------------|
| C5750X7R1H475K/2.00                | X7R                         | 50V           | 4,700,000        | ± 10%                 | 2.00 ± 0.20    |
| C5750X7R1H475M/2.00                | X7R                         | 50V           | 4,700,000        | ± 20%                 | 2.00 ± 0.20    |
| C5750X7R1H475M/2.80                | X7R                         | 50V           | 4,700,000        | ± 20%                 | 2.80 ± 0.20    |
| C5750X7R1H685K                     | X7R                         | 50V           | 6,800,000        | ± 10%                 | 2.50 ± 0.30    |
| C5750X7R1H685M                     | X7R                         | 50V           | 6,800,000        | ± 20%                 | 2.50 ± 0.30    |
| C5750X7R1H106K                     | X7R                         | 50V           | 10,000,000       | ± 10%                 | 2.30 ± 0.20    |
| C5750X7R1H106M                     | X7R                         | 50V           | 10,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C5750X7R1E106M                     | X7R                         | 25V           | 10,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C5750X7R1E156M                     | X7R                         | 25V           | 15,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C5750X7R1E226M                     | X7R                         | 25V           | 22,000,000       | ± 20%                 | 2.50 ± 0.30    |
| C5750X7R1C226M                     | X7R                         | 16V           | 22,000,000       | ± 20%                 | 2.80 ± 0.20    |
| C5750X7R1C476M                     | X7R                         | 16V           | 47,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C5750X5R1H106K                     | X5R                         | 50V           | 10,000,000       | ± 10%                 | 2.30 ± 0.20    |
| C5750X5R1H106M                     | X5R                         | 50V           | 10,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C5750X5R1E226M                     | X5R                         | 25V           | 22,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C5750X5R1C336M                     | X5R                         | 16V           | 33,000,000       | ± 20%                 | 2.00 ± 0.20    |
| C5750X5R1C476M                     | X5R                         | 16V           | 47,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C5750X5R1A686M                     | X5R                         | 10V           | 68,000,000       | ± 20%                 | 2.30 ± 0.20    |
| C5750X5R1A107M                     | X5R                         | 10V           | 100,000,000      | ± 20%                 | 2.80 ± 0.20    |
| C5750X5R0J107M                     | X5R                         | 6.3V          | 100,000,000      | ± 20%                 | 2.80 ± 0.20    |
| C5750Y5V1H226Z                     | Y5V                         | 50V           | 22,000,000       | +80/-20%              | 2.00 ± 0.20    |
| C5750Y5V1E476Z                     | Y5V                         | 25V           | 47,000,000       | +80/-20%              | 2.00 ± 0.20    |
| C5750Y5V1C107Z                     | Y5V                         | 16V           | 100,000,000      | +80/-20%              | 2.50 ± 0.30    |
| C5750Y5V1A107Z                     | Y5V                         | 10V           | 100,000,000      | +80/-20%              | 2.50 ± 0.30    |



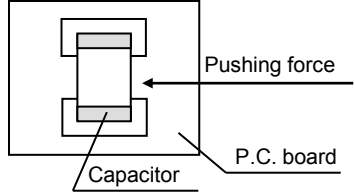
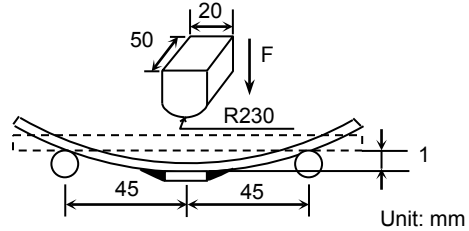
| No.               | Item                                | Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Test or Inspection Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|-------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|---------------------|-------------------|---------------|-------------------------------------------------|-----------|--------------------------|------------|------------|---------|-----------|----------|-------------------------|----------|-------------|-------------------------------------------------------|------------|--------|-----------|-------------------------------------------------|
| 1                 | <b>External Appearance</b>          | No defects which may affect performance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Inspect with magnifying glass (3×), in case of C0603 type, with magnifying glass (10×).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| 2                 | <b>Insulation Resistance</b>        | 10,000MΩ or 500MΩ•μF min.<br>(As for the capacitors of rated voltage 16, 10 and 6.3V DC, 10,000 MΩ or 100MΩ•μF min.,) whichever smaller.                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Apply rated voltage for 60s. As for the rated voltage 630V DC, apply 500V DC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| 3                 | <b>Voltage Proof</b>                | Withstand test voltage without insulation breakdown or other damage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <table border="1"> <thead> <tr> <th>Class</th> <th>Apply voltage</th> </tr> </thead> <tbody> <tr> <td>Class 1</td> <td>3 × rated voltage</td> </tr> <tr> <td>Class 2</td> <td>2.5 × rated voltage</td> </tr> </tbody> </table> <p>Above DC voltage shall be applied for 1 to 5s. Charge / discharge current shall not exceed 50mA.</p>                                                                                                                                                                                                                                                     | Class         | Apply voltage     | Class 1             | 3 × rated voltage | Class 2       | 2.5 × rated voltage                             |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Class             | Apply voltage                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Class 1           | 3 × rated voltage                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Class 2           | 2.5 × rated voltage                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| 4                 | <b>Capacitance</b>                  | Within the specified tolerance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <table border="1"> <thead> <tr> <th>Class</th> <th>Rated Capacitance</th> <th>Measuring Frequency</th> <th>Measuring voltage</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Class 1</td> <td>C ≤ 1000pF</td> <td>1MHz±10%</td> <td rowspan="2">0.5 - 5 V<sub>rms</sub></td> </tr> <tr> <td>C &gt; 1000pF</td> <td>1kHz ± 10%</td> </tr> <tr> <td rowspan="2">Class 2</td> <td>C ≤ 10uF</td> <td>1kHz±10%</td> <td>0.5±0.2V<sub>rms</sub></td> </tr> <tr> <td>C &gt; 10uF</td> <td>120Hz ± 20%</td> <td>1.0±0.2V<sub>rms</sub><br/>0.5 ± 0.2 V<sub>rms</sub></td> </tr> </tbody> </table> | Class         | Rated Capacitance | Measuring Frequency | Measuring voltage | Class 1       | C ≤ 1000pF                                      | 1MHz±10%  | 0.5 - 5 V <sub>rms</sub> | C > 1000pF | 1kHz ± 10% | Class 2 | C ≤ 10uF  | 1kHz±10% | 0.5±0.2V <sub>rms</sub> | C > 10uF | 120Hz ± 20% | 1.0±0.2V <sub>rms</sub><br>0.5 ± 0.2 V <sub>rms</sub> |            |        |           |                                                 |
| Class             | Rated Capacitance                   | Measuring Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Measuring voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Class 1           | C ≤ 1000pF                          | 1MHz±10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.5 - 5 V <sub>rms</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   | C > 1000pF                          | 1kHz ± 10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Class 2           | C ≤ 10uF                            | 1kHz±10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.5±0.2V <sub>rms</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   | C > 10uF                            | 120Hz ± 20%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.0±0.2V <sub>rms</sub><br>0.5 ± 0.2 V <sub>rms</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| 5                 | <b>Q (Class 1)</b>                  | <table border="1"> <thead> <tr> <th>Rated Capacitance</th> <th>Q</th> </tr> </thead> <tbody> <tr> <td>30pF and over</td> <td>1,000 min.</td> </tr> <tr> <td>Under 30pF</td> <td>400+20×C min.</td> </tr> </tbody> </table> <p>C : Rated capacitance (pF)</p>                                                                                                                                                                                                                                                                                                                                           | Rated Capacitance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Q             | 30pF and over     | 1,000 min.          | Under 30pF        | 400+20×C min. | See No.4 in this table for measuring condition. |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Rated Capacitance | Q                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| 30pF and over     | 1,000 min.                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Under 30pF        | 400+20×C min.                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| 6                 | <b>Dissipation Factor (Class 2)</b> | <table border="1"> <thead> <tr> <th>T.C.</th> <th>Rated Voltage</th> <th>D.F.</th> </tr> </thead> <tbody> <tr> <td rowspan="5">X5R<br/>X7R</td> <td rowspan="5">-</td> <td>0.03 max.</td> </tr> <tr> <td>0.05 max.</td> </tr> <tr> <td>0.75 max.</td> </tr> <tr> <td>0.1 max.</td> </tr> <tr> <td>0.125 max.</td> </tr> <tr> <td rowspan="5">Y5V</td> <td>50VDC</td> <td>0.05 max.</td> </tr> <tr> <td>25VDC</td> <td>0.075 max.</td> </tr> <tr> <td>16VDC</td> <td>0.10 max.</td> </tr> <tr> <td>10VDC</td> <td>0.125 max.</td> </tr> <tr> <td>6.3VDC</td> <td>0.20 max.</td> </tr> </tbody> </table> | T.C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Rated Voltage | D.F.              | X5R<br>X7R          | -                 | 0.03 max.     | 0.05 max.                                       | 0.75 max. | 0.1 max.                 | 0.125 max. | Y5V        | 50VDC   | 0.05 max. | 25VDC    | 0.075 max.              | 16VDC    | 0.10 max.   | 10VDC                                                 | 0.125 max. | 6.3VDC | 0.20 max. | See No.4 in this table for measuring condition. |
| T.C.              | Rated Voltage                       | D.F.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| X5R<br>X7R        | -                                   | 0.03 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   |                                     | 0.05 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   |                                     | 0.75 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   |                                     | 0.1 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   |                                     | 0.125 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
| Y5V               | 50VDC                               | 0.05 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   | 25VDC                               | 0.075 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   | 16VDC                               | 0.10 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   | 10VDC                               | 0.125 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |
|                   | 6.3VDC                              | 0.20 max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |                     |                   |               |                                                 |           |                          |            |            |         |           |          |                         |          |             |                                                       |            |        |           |                                                 |





## General Specifications

## C Series – General Application

| No.                | Item                                                        | Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Test or Inspection Method                                                                                                                                                                                                                                                                                     |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
|--------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|------------|------|------------|------|----------|------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------|---|-------------------------|---|------------------------------|---|-------------------------|---|------------------------------|
| 7                  | <b>Temperature Characteristics of Capacitance (Class 1)</b> | <table border="1"> <tr> <th>T.C.</th> <th>Temperature Coefficient</th> </tr> <tr> <td>COG</td> <td><math>0 \pm 30</math> (ppm/°C)</td> </tr> </table> <p>Capacitance drift<br/>Within <math>\pm 0.2\%</math> or <math>\pm 0.05\text{pF}</math>, whichever larger.</p>                                                                                                                                                                                                 | T.C.                                                                                                                                                                                                                                                                                                          | Temperature Coefficient | COG  | $0 \pm 30$ (ppm/°C) | <p>Temperature coefficient shall be calculated based on values at 25°C and 85°C temperature.</p> <p>Measuring temperature below 20°C shall be -10°C and -25°C.</p> |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| T.C.               | Temperature Coefficient                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| COG                | $0 \pm 30$ (ppm/°C)                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| 8                  | <b>Temperature Characteristics of Capacitance (Class 2)</b> | <p>Capacitance Change (%)</p> <table border="1"> <thead> <tr> <th colspan="2">No Voltage Applied</th> </tr> </thead> <tbody> <tr> <td>X5R:</td> <td><math>\pm 15\%</math></td> </tr> <tr> <td>X7R:</td> <td><math>\pm 15\%</math></td> </tr> <tr> <td>X6S:</td> <td><math>\pm 22\%</math></td> </tr> <tr> <td>X7S:</td> <td><math>\pm 22\%</math></td> </tr> <tr> <td>X7T:</td> <td>+22/-33%</td> </tr> <tr> <td>Y5V:</td> <td>+ 22/-82%</td> </tr> </tbody> </table> | No Voltage Applied                                                                                                                                                                                                                                                                                            |                         | X5R: | $\pm 15\%$          | X7R:                                                                                                                                                               | $\pm 15\%$ | X6S: | $\pm 22\%$ | X7S: | $\pm 22\%$ | X7T: | +22/-33% | Y5V: | + 22/-82% | <p>Capacitance shall be measured by the steps shown in the following table after thermal equilibrium is obtained for each step.</p> <p><math>\Delta C</math> be calculated ref. STEP 3 reading</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Reference temp. <math>\pm 2</math></td> </tr> <tr> <td>2</td> <td>Min. operating temp. <math>\pm 2</math></td> </tr> <tr> <td>3</td> <td>Reference temp. <math>\pm 2</math></td> </tr> <tr> <td>4</td> <td>Max. operating temp. <math>\pm 2</math></td> </tr> </tbody> </table> <p>Measuring voltage: 0.1, 0.2, 0.5, 1.0V<sub>rms</sub>.</p> | Step | Temperature (°C) | 1 | Reference temp. $\pm 2$ | 2 | Min. operating temp. $\pm 2$ | 3 | Reference temp. $\pm 2$ | 4 | Max. operating temp. $\pm 2$ |
| No Voltage Applied |                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| X5R:               | $\pm 15\%$                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| X7R:               | $\pm 15\%$                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| X6S:               | $\pm 22\%$                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| X7S:               | $\pm 22\%$                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| X7T:               | +22/-33%                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| Y5V:               | + 22/-82%                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| Step               | Temperature (°C)                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| 1                  | Reference temp. $\pm 2$                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| 2                  | Min. operating temp. $\pm 2$                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| 3                  | Reference temp. $\pm 2$                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| 4                  | Max. operating temp. $\pm 2$                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| 9                  | <b>Robustness of Terminations</b>                           | No sign of termination coming off, breakage of ceramic, or other abnormal signs.                                                                                                                                                                                                                                                                                                                                                                                      | <p>Reflow solder the capacitor on P.C. board (shown in Appendix 1a or Appendix 1b) and apply a pushing force of 2N (C0603, C1005) or 5N (C1608, C2012, C3216, C3225, C4532, C5750) for <math>10 \pm 1\text{s}</math>.</p>  |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |
| 10                 | <b>Bending</b>                                              | No mechanical damage.                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Reflow solder the capacitor on P.C. board (shown in Appendix 2a or Appendix 2b) and bend it for 1mm.</p>                                                                                                               |                         |      |                     |                                                                                                                                                                    |            |      |            |      |            |      |          |      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                  |   |                         |   |                              |   |                         |   |                              |



| No.                  | Item                             | Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Test or Inspection Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|----------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------|------------|-------------------|---------------------------------------------------------------------------------|---------|-----|-------------|-----|-------------|-----|------------|--|
| 11                   | <b>Solderability</b>             | <p>New solder to cover over 75% of termination.</p> <p>25% may have pinholes or rough spots but not concentrated in one spot.</p> <p>Ceramic surface of A sections shall not be exposed due to melting or shifting of termination material.</p>                                                                                                                                                                                                                                                                     | <p>Completely soak both terminations in solder at <math>235 \pm 5^\circ\text{C}</math> for <math>2 \pm 0.5\text{s}</math>.</p> <p>Solder: H63A (JIS Z 3282)</p> <p>Flux: Isopropyl alcohol (JIS K 8839)<br/>Rosin (JIS K 5902) 25% solid solution.</p>                                                                                                                                                                                                                                        |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      |                                  | <p>A section</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
| 12                   | <b>Resistance to solder heat</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>Completely soak both terminations in solder at <math>260 \pm 5^\circ\text{C}</math> for <math>5 \pm 1\text{s}</math>.</p> <p>Preheating condition<br/>Temp.: <math>150 \pm 10^\circ\text{C}</math><br/>Time: 1 to 2min.</p> <p>Flux: Isopropyl alcohol (JIS K 8839)<br/>Rosin (JIS K 5902) 25% solid solution.</p> <p>Solder: H63A (JIS Z 3282)</p> <p>Leave the capacitor in ambient conditions for 6 to 24h (Class 1) or <math>24 \pm 2\text{h}</math> (Class 2) before measurement.</p> |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | External appearance              | No cracks are allowed and terminations shall be covered at least 60% with new solder.                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | Capacitance                      | <table border="1"> <thead> <tr> <th colspan="2">Characteristics</th> <th>Change from the value before test</th> </tr> </thead> <tbody> <tr> <td>Class 1</td> <td>C0G</td> <td>Capacitance drift within <math>\pm 2.5\%</math> or <math>\pm 0.25\text{pF}</math>, whichever larger.</td> </tr> <tr> <td rowspan="3">Class 2</td> <td>X5R</td> <td><math>\pm 7.5\%</math></td> </tr> <tr> <td>X7R</td> <td><math>\pm 7.5\%</math></td> </tr> <tr> <td>Y5V</td> <td><math>\pm 20\%</math></td> </tr> </tbody> </table> | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   | Change from the value before test | Class 1    | C0G               | Capacitance drift within $\pm 2.5\%$ or $\pm 0.25\text{pF}$ , whichever larger. | Class 2 | X5R | $\pm 7.5\%$ | X7R | $\pm 7.5\%$ | Y5V | $\pm 20\%$ |  |
| Characteristics      |                                  | Change from the value before test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
| Class 1              | C0G                              | Capacitance drift within $\pm 2.5\%$ or $\pm 0.25\text{pF}$ , whichever larger.                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
| Class 2              | X5R                              | $\pm 7.5\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | X7R                              | $\pm 7.5\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | Y5V                              | $\pm 20\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | Q (Class 1)                      | <table border="1"> <thead> <tr> <th>Rated Capacitance</th> <th>Q</th> </tr> </thead> <tbody> <tr> <td><math>C \geq 30\text{pF}</math></td> <td>1,000 min.</td> </tr> <tr> <td><math>C &lt; 30\text{pF}</math></td> <td><math>400 + 20 \times C</math> min.</td> </tr> </tbody> </table> <p style="text-align: center;">C : Rated capacitance (pF)</p>                                                                                                                                                               | Rated Capacitance                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Q | $C \geq 30\text{pF}$              | 1,000 min. | $C < 30\text{pF}$ | $400 + 20 \times C$ min.                                                        |         |     |             |     |             |     |            |  |
| Rated Capacitance    | Q                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
| $C \geq 30\text{pF}$ | 1,000 min.                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
| $C < 30\text{pF}$    | $400 + 20 \times C$ min.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | D.F. (Class 2)                   | Meet the initial spec.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | Insulation Resistance            | Meet the initial spec.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |
|                      | Voltage Proof                    | No insulation breakdown or other damage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                   |            |                   |                                                                                 |         |     |             |     |             |     |            |  |



| No.                   | Item                                     | Performance                              | Test or Inspection Method                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|-----------------------|------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------|---|------------------------------|------------|---|-----------------|-------|---|------------------------------|------------|---|-----------------|-------|
| 13                    | <b>Vibration</b>                         |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | External appearance                      | No mechanical damage.                    | Reflow solder the capacitor on P.C. board (shown in Appendix 1a or Appendix 1b) before testing.                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | Capacitance                              | <b>Characteristics</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Vibrate the capacitor with amplitude of 1.5mm P-P changing the frequencies from 10Hz to 55Hz and back to 10Hz after 1min. Repeat this for 2h each in 3 perpendicular directions. |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | <b>Change from the value before test</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | Class 1                                  | C0G                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                  | $\pm 2.5\%$ or $\pm 0.25\text{pF}$ , whichever larger. |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | Class 2                                  | X5R<br>X7R<br>Y5V                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                  | $\pm 7.5\%$<br>$\pm 7.5\%$<br>$\pm 20\%$               |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | Q (Class 1)                              | <b>Rated Capacitance</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Q</b>                                                                                                                                                                         |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | $C \geq 30\text{pF}$                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  | 1,000 min.                                             |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | $C < 30\text{pF}$                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  | $400+20 \times C$ min.                                 |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | C : Rated capacitance (pF)               |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| D.F. (Class 2)        | Meet the initial spec.                   |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| 14                    | <b>Temperature cycle</b>                 |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | External appearance                      | No mechanical damage.                    | Reflow solder the capacitor on P.C. board (shown in Appendix 1a or Appendix 1b) before testing.                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | Capacitance                              | <b>Characteristics</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Expose the capacitor in the condition step1 through step 4 and repeat 5 times consecutively.                                                                                     |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | <b>Change from the value before test</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | Class 1                                  | C0G                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                  | $\pm 2.5\%$ or $\pm 0.25\text{pF}$ , whichever larger. |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | Class 2                                  | X5R<br>X7R<br>Y5V                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                  | $\pm 15\%$<br>$\pm 15\%$<br>$\pm 20\%$                 |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | Q (Class 1)                              | <b>Rated Capacitance</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Q</b>                                                                                                                                                                         |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | $C \geq 30\text{pF}$                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  | 1,000 min.                                             |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          | $C < 30\text{pF}$                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  | $400+20 \times C$ min.                                 |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       | C : Rated capacitance (pF)               |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| D.F. (Class 2)        | Meet the initial spec.                   |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| Insulation Resistance | Meet the initial spec.                   |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| Voltage Proof         | No insulation breakdown or other damage. |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
|                       |                                          |                                          | <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp. <math>\pm 3</math></td> <td><math>30 \pm 3</math></td> </tr> <tr> <td>2</td> <td>Reference Temp.</td> <td>2 - 5</td> </tr> <tr> <td>3</td> <td>Max. operating temp. <math>\pm 2</math></td> <td><math>30 \pm 2</math></td> </tr> <tr> <td>4</td> <td>Reference Temp.</td> <td>2 - 5</td> </tr> </tbody> </table> | Step                                                                                                                                                                             | Temperature (°C)                                       | Time (min.) | 1 | Min. operating temp. $\pm 3$ | $30 \pm 3$ | 2 | Reference Temp. | 2 - 5 | 3 | Max. operating temp. $\pm 2$ | $30 \pm 2$ | 4 | Reference Temp. | 2 - 5 |
| Step                  | Temperature (°C)                         | Time (min.)                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| 1                     | Min. operating temp. $\pm 3$             | $30 \pm 3$                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| 2                     | Reference Temp.                          | 2 - 5                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| 3                     | Max. operating temp. $\pm 2$             | $30 \pm 2$                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |
| 4                     | Reference Temp.                          | 2 - 5                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                  |                                                        |             |   |                              |            |   |                 |       |   |                              |            |   |                 |       |



| No.                        | Item                                                                                                                                                                                               | Performance            | Test or Inspection Method                                                                                                                                                                                                                                                                                      |                           |                                                     |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------|
| 15                         | <b>Moisture Resistance (Steady State)</b>                                                                                                                                                          |                        | Reflow solder the capacitor on P.C. board (shown in Appendix 1a or Appendix 1b) before testing.<br><br>Leave at temperature $40 \pm 2^\circ\text{C}$ , 90 to 95%RH for 500 +24,0h.<br><br>Leave the capacitor in ambient conditions for 6 to 24h (Class 1) or $24 \pm 2\text{h}$ (Class 2) before measurement. |                           |                                                     |
|                            | External appearance                                                                                                                                                                                | No mechanical damage.  |                                                                                                                                                                                                                                                                                                                |                           |                                                     |
|                            | Capacitance                                                                                                                                                                                        | <b>Characteristics</b> |                                                                                                                                                                                                                                                                                                                |                           |                                                     |
|                            |                                                                                                                                                                                                    | Class 1                |                                                                                                                                                                                                                                                                                                                | C0G                       | $\pm 5\%$ or $\pm 0.5\text{pF}$ , whichever larger. |
|                            |                                                                                                                                                                                                    | Class 2                |                                                                                                                                                                                                                                                                                                                | X5R                       | $\pm 25\%$                                          |
| X7R                        | $\pm 25\%$                                                                                                                                                                                         |                        |                                                                                                                                                                                                                                                                                                                |                           |                                                     |
|                            | Y5V                                                                                                                                                                                                | $\pm 30\%$             |                                                                                                                                                                                                                                                                                                                |                           |                                                     |
| Q (Class 1)                | <b>Rated Capacitance</b>                                                                                                                                                                           |                        | <b>Q</b>                                                                                                                                                                                                                                                                                                       |                           |                                                     |
|                            | $C \geq 30\text{pF}$                                                                                                                                                                               |                        |                                                                                                                                                                                                                                                                                                                | 350 min.                  |                                                     |
|                            | $10\text{pF} \leq C < 30\text{pF}$                                                                                                                                                                 |                        |                                                                                                                                                                                                                                                                                                                | $275 + 5/2 \times C$ min. |                                                     |
|                            | $C < 10\text{pF}$                                                                                                                                                                                  |                        |                                                                                                                                                                                                                                                                                                                | $200 + 10 \times C$ min.  |                                                     |
| C : Rated capacitance (pF) |                                                                                                                                                                                                    |                        |                                                                                                                                                                                                                                                                                                                |                           |                                                     |
| D.F. (Class 2)             | Characteristics<br>X5R: 200% of initial spec. max.<br>X7R: 200% of initial spec. max<br>Y5V: 150% of initial spec. max                                                                             |                        |                                                                                                                                                                                                                                                                                                                |                           |                                                     |
| Insulation Resistance      | 1,000M $\Omega$ or 50M $\Omega \cdot \mu\text{F}$ min.<br>(As for the capacitors of rated voltage 16, 10 and 6.3V DC, 1,000 M $\Omega$ or 10M $\Omega \cdot \mu\text{F}$ min.,) whichever smaller. |                        |                                                                                                                                                                                                                                                                                                                |                           |                                                     |



| No.                  | Item                                         | Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Test or Inspection Method                                                                       |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|----------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---|-----------------------------------|----------|-------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|-----|------------|-----|----------------------------|-------------------------------------------------|
| 16                   | <b>Moisture Resistance</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | External appearance                          | No mechanical damage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Reflow solder the capacitor on P.C. board (shown in Appendix 1a or Appendix 1b) before testing. |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | Capacitance                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Apply the rated voltage at temperature $40 \pm 2^\circ\text{C}$ and 90 to 95%RH for 500 +24,0h. |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      |                                              | <table border="1"> <thead> <tr> <th colspan="2">Characteristics</th> <th>Change from the value before test</th> </tr> </thead> <tbody> <tr> <td>Class 1</td> <td>C0G</td> <td><math>\pm 7.5\%</math> or <math>\pm 0.75\text{pF}</math>, whichever larger.</td> </tr> <tr> <td rowspan="3">Class 2</td> <td>X5R</td> <td><math>\pm 25\%</math></td> </tr> <tr> <td>X7R</td> <td><math>\pm 25\%</math></td> </tr> <tr> <td>Y5V</td> <td><math>\pm 30\%</math> *(<math>\pm 40\%</math>)</td> </tr> </tbody> </table> | Characteristics                                                                                 |   | Change from the value before test | Class 1  | C0G               | $\pm 7.5\%$ or $\pm 0.75\text{pF}$ , whichever larger. | Class 2                                                                                                                                                                                                                                                              | X5R | $\pm 25\%$ | X7R | $\pm 25\%$ | Y5V | $\pm 30\%$ *( $\pm 40\%$ ) | Charge/discharge current shall not exceed 50mA. |
|                      | Characteristics                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Change from the value before test                                                               |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
| Class 1              | C0G                                          | $\pm 7.5\%$ or $\pm 0.75\text{pF}$ , whichever larger.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
| Class 2              | X5R                                          | $\pm 25\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | X7R                                          | $\pm 25\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | Y5V                                          | $\pm 30\%$ *( $\pm 40\%$ )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | * Inside ( ) is applied to Y5V 6.3V product. | Leave the capacitor in ambient conditions for 6 to 24h (Class 1) or $24 \pm 2\text{h}$ (Class 2) before measurement.                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | Q (Class 1)                                  | <table border="1"> <thead> <tr> <th>Rated Capacitance</th> <th>Q</th> </tr> </thead> <tbody> <tr> <td><math>C \geq 30\text{pF}</math></td> <td>200 min.</td> </tr> <tr> <td><math>C &lt; 30\text{pF}</math></td> <td><math>100 + 10/3 \times C</math> min.</td> </tr> </tbody> </table> <p style="text-align: center;">C : Rated capacitance (pF)</p>                                                                                                                                                             | Rated Capacitance                                                                               | Q | $C \geq 30\text{pF}$              | 200 min. | $C < 30\text{pF}$ | $100 + 10/3 \times C$ min.                             | Voltage conditioning (only for Class 2):<br>Voltage treat the capacitor under testing temperature and voltage for 1 hour.<br><br>Leave the capacitor in ambient conditions for $24 \pm 2\text{h}$ before measurement.<br><br>Use this measurement for initial value. |     |            |     |            |     |                            |                                                 |
| Rated Capacitance    | Q                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
| $C \geq 30\text{pF}$ | 200 min.                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
| $C < 30\text{pF}$    | $100 + 10/3 \times C$ min.                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | D.F. (Class 2)                               | Characteristics<br>X5R: 200% of initial spec. max.<br>X7R: 200% of initial spec. max<br>Y5V: 150% of initial spec. max                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |
|                      | Insulation Resistance                        | $500\text{M}\Omega$ or $25\text{M}\Omega \cdot \mu\text{F}$ min., whichever smaller.<br>(As for the capacitors of rated voltage 16, 10 and 6.3V DC, $500\text{M}\Omega$ or $5\text{M}\Omega \cdot \mu\text{F}$ min.,)                                                                                                                                                                                                                                                                                             |                                                                                                 |   |                                   |          |                   |                                                        |                                                                                                                                                                                                                                                                      |     |            |     |            |     |                            |                                                 |



| No.                                          | Item                                                                                                                                                                                                 | Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Test or Inspection Method                                                                                                                                        |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|---------|-----|-----------------------------------------------------|---------|-----|------------|-----|------------|-----|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 17                                           | <b>Life</b>                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | External appearance                                                                                                                                                                                  | No mechanical damage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Reflow solder the capacitor on P.C. board (shown in Appendix 1a or Appendix 1b) before testing.<br>Apply voltage at $125 \pm 2^\circ\text{C}$ for 1,000 +48, 0h. |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | Capacitance                                                                                                                                                                                          | <table border="1"> <thead> <tr> <th colspan="2">Characteristics</th> <th>Change from the value before test</th> </tr> </thead> <tbody> <tr> <td>Class 1</td> <td>C0G</td> <td><math>\pm 3\%</math> or <math>\pm 0.3\text{pF}</math>, whichever larger.</td> </tr> <tr> <td rowspan="3">Class 2</td> <td>X5R</td> <td><math>\pm 25\%</math></td> </tr> <tr> <td>X7R</td> <td><math>\pm 25\%</math></td> </tr> <tr> <td>Y5V</td> <td><math>\pm 30\%</math> *(<math>\pm 40\%</math>)</td> </tr> </tbody> </table> | Characteristics                                                                                                                                                  |                                   | Change from the value before test | Class 1 | C0G | $\pm 3\%$ or $\pm 0.3\text{pF}$ , whichever larger. | Class 2 | X5R | $\pm 25\%$ | X7R | $\pm 25\%$ | Y5V | $\pm 30\%$ *( $\pm 40\%$ ) | Applied voltage is 1xRV. Some items may be tested at higher voltage (1.2x, 1.5x or 2xRV).<br>Charge/discharge current shall not exceed 50mA. |
|                                              |                                                                                                                                                                                                      | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  | Change from the value before test |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
| Class 1                                      | C0G                                                                                                                                                                                                  | $\pm 3\%$ or $\pm 0.3\text{pF}$ , whichever larger.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
| Class 2                                      | X5R                                                                                                                                                                                                  | $\pm 25\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | X7R                                                                                                                                                                                                  | $\pm 25\%$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | Y5V                                                                                                                                                                                                  | $\pm 30\%$ *( $\pm 40\%$ )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
| * Inside ( ) is applied to Y5V 6.3V product. |                                                                                                                                                                                                      | Leave the capacitors in ambient condition for 6 to 24h (Class 1) or $24 \pm 2\text{h}$ (Class 2) before measurement.<br>Voltage conditioning (only for class 2) Voltage treat the capacitor under testing temperature and voltage for 1 hour.                                                                                                                                                                                                                                                                  |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
| Q<br>(Class 1)                               | Rated Capacitance                                                                                                                                                                                    | Q                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Leave the capacitor in ambient conditions for $24 \pm 2\text{h}$ before measurement.                                                                             |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | $C \geq 30\text{pF}$                                                                                                                                                                                 | 350 min.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Use this measurement for initial value.                                                                                                                          |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | $10\text{pF} \leq C < 30\text{pF}$                                                                                                                                                                   | $275 + 5/2 \times C$ min.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | $C < 10\text{pF}$                                                                                                                                                                                    | $200 + 10 \times C$ min.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
| C : Rated capacitance (pF)                   |                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
| D.F.<br>(Class 2)                            | Characteristics                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | X5R: 200% of initial spec. max.                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | X7R: 200% of initial spec. max                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
|                                              | Y5V: 150% of initial spec. max                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |
| Insulation Resistance                        | 1,000M $\Omega$ or 50M $\Omega \cdot \mu\text{F}$ min. , whichever smaller.<br>(As for the capacitors of rated voltage 16, 10 and 6.3V DC, 1,000 M $\Omega$ or 10M $\Omega \cdot \mu\text{F}$ min.,) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  |                                   |                                   |         |     |                                                     |         |     |            |     |            |     |                            |                                                                                                                                              |

\*As for the initial measurement of capacitors (Class2) on number 8,12,13,14 and 15, leave capacitor at  $150 - 10, 0^\circ\text{C}$  for 1 hour and measure the value after leaving capacitor for  $24 \pm 2\text{h}$  in ambient conditions.





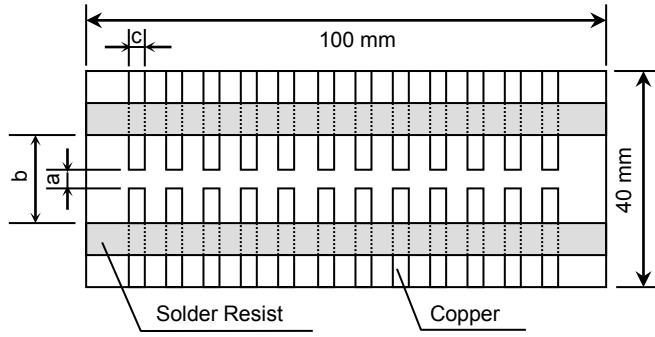
## General Specifications

# C Series – General Application

### Appendix - 1a

#### P.C. Board for reliability test

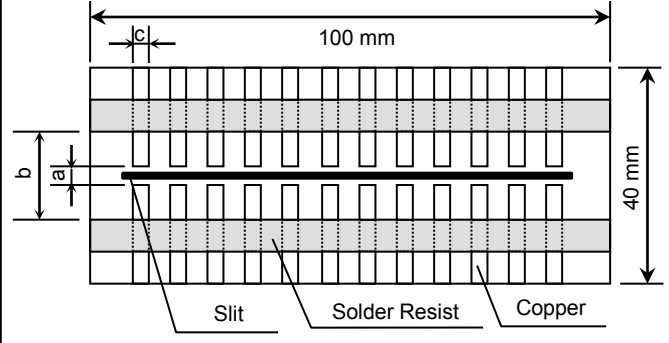
Applied for C0603, C1005, C1608, C2012, C3216



### Appendix - 1b

#### P.C. Board for reliability test

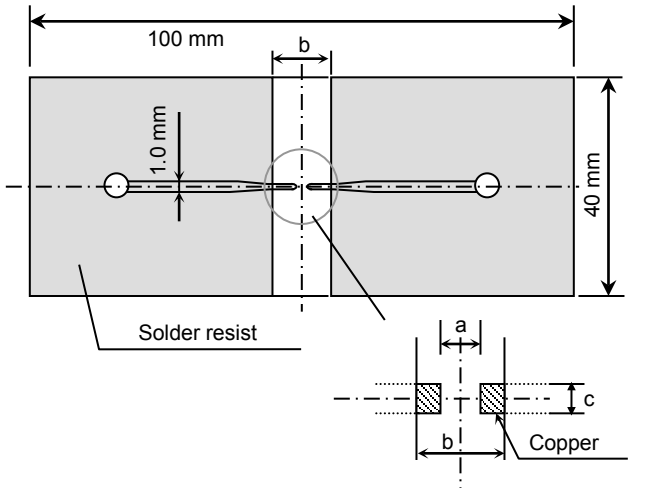
Applied for C3225, C4532, C5750



### Appendix - 2a

#### P.C. Board for bending test

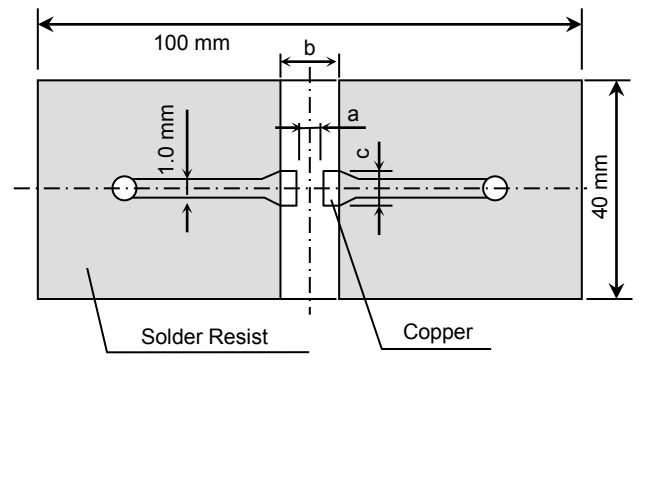
Applied for C0603, C1005



### Appendix - 2b

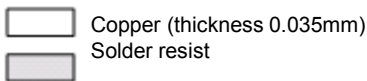
#### P.C. Board for bending test

Applied for C1608, C2012, C3216, C3225, C4532, C5750



Material: Glass Epoxy (As per JIS C6484 GE4)

P.C. Board thickness: Appendix-2a 0.8mm  
Appendix-1a, 1b, 2b 1.6mm

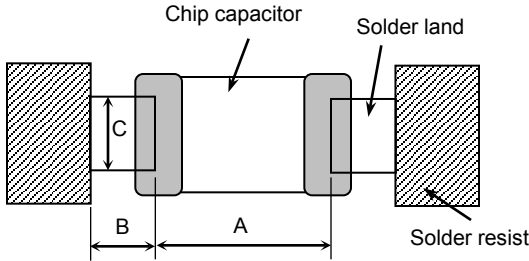


| Case Code |        | Dimensions (mm) |     |      |
|-----------|--------|-----------------|-----|------|
| JIS       | EIA    | a               | b   | c    |
| C0603     | CC0201 | 0.3             | 0.8 | 0.3  |
| C1005     | CC0402 | 0.4             | 1.5 | 0.5  |
| C1608     | CC0603 | 1.0             | 3.0 | 1.2  |
| C2012     | CC0805 | 1.2             | 4.0 | 1.65 |
| C3216     | CC1206 | 2.2             | 5.0 | 2.0  |
| C3225     | CC1210 | 2.2             | 5.0 | 2.9  |
| C4532     | CC1812 | 3.5             | 7.0 | 3.7  |
| C5750     | CC2220 | 4.5             | 8.0 | 5.6  |

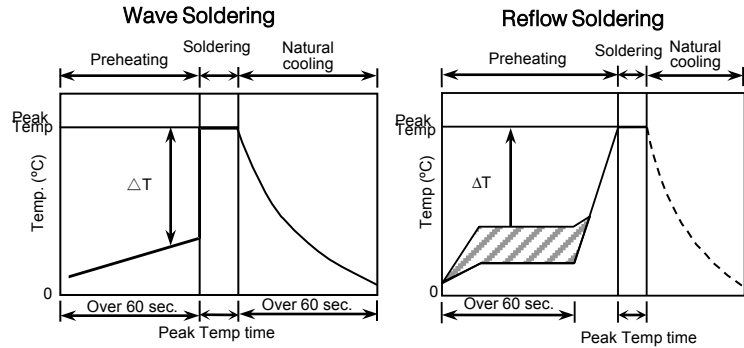
## Soldering Information

# C Series – General Application

### Recommended Soldering Land Pattern



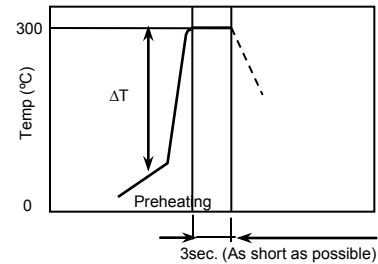
### Recommended Soldering Profile



**Wave Soldering** Unit: mm

| Type | C1608<br>[CC0603] | C2012<br>[CC0805] | C3216<br>[CC1206] |
|------|-------------------|-------------------|-------------------|
| A    | 0.7 - 1.0         | 1.0 - 1.3         | 2.1 - 2.5         |
| B    | 0.8 - 1.0         | 1.0 - 1.2         | 1.1 - 1.3         |
| C    | 0.6 - 0.8         | 0.8 - 1.1         | 1.0 - 1.3         |

### Manual soldering (Solder iron)



**Reflow Soldering** Unit: mm

| Type | C0603<br>[CC0201] | C1005<br>[CC0402] | C1608<br>[CC0603] | C2012<br>[CC0805] |
|------|-------------------|-------------------|-------------------|-------------------|
| A    | 0.25 - 0.35       | 0.3 - 0.5         | 0.6 - 0.8         | 0.9 - 1.2         |
| B    | 0.2 - 0.3         | 0.35 - 0.45       | 0.6 - 0.8         | 0.7 - 0.9         |
| C    | 0.25 - 0.35       | 0.4 - 0.6         | 0.6 - 0.8         | 0.9 - 1.2         |

**Reflow Soldering** Unit: mm

| Type | C3216<br>[CC1206] | C3225<br>[CC1210] | C4532<br>[CC1812] | C5750<br>[CC2220] |
|------|-------------------|-------------------|-------------------|-------------------|
| A    | 2.0 - 2.4         | 2.0 - 2.4         | 3.1 - 3.7         | 4.1 - 4.8         |
| B    | 1.0 - 1.2         | 1.0 - 1.2         | 1.2 - 1.4         | 1.2 - 1.4         |
| C    | 1.1 - 1.6         | 1.9 - 2.5         | 2.4 - 3.2         | 4.0 - 5.0         |

### Recommended soldering duration

| Solder           | Temp./Dura. | Wave Soldering |                 | Reflow Soldering |                 |
|------------------|-------------|----------------|-----------------|------------------|-----------------|
|                  |             | Peak temp (°C) | Duration (sec.) | Peak temp (°C)   | Duration (sec.) |
| Sn-Pb Solder     |             | 250 max.       | 3 max.          | 230 max.         | 20 max.         |
| Lead-Free Solder |             | 260 max.       | 5 max.          | 260 max.         | 10 max.         |

### Recommended solder compositions

- Sn-37Pb (Sn-Pb solder)
- Sn-3.0Ag-0.5Cu (Lead Free Solder)

### Preheating Condition

| Soldering        | Case Size - JIS (EIA)                                                     | Temp. (°C)          |
|------------------|---------------------------------------------------------------------------|---------------------|
| Wave soldering   | C1608(CC0603), C2012(CC0805), C3216(CC1206)                               | $\Delta T \leq 150$ |
|                  | C0603(CC0201), C1005(CC0402), C1608(CC0603), C2012(CC0805), C3216(CC1206) | $\Delta T \leq 150$ |
| Reflow soldering | C3225(CC1210), C4532(CC1812), C5750(CC2220)                               | $\Delta T \leq 130$ |
|                  | C0603(CC0201), C1005(CC0402), C1608(CC0603), C2012(CC0805), C3216(CC1206) | $\Delta T \leq 150$ |
| Manual soldering | C3225(CC1210), C4532(CC1812), C5750(CC2220)                               | $\Delta T \leq 130$ |
|                  |                                                                           |                     |

### Recommended Solder Amount

Excessive solder Higher tensile force on the chip capacitor may cause cracking.

Adequate solder Maximum amount  
Minimum amount

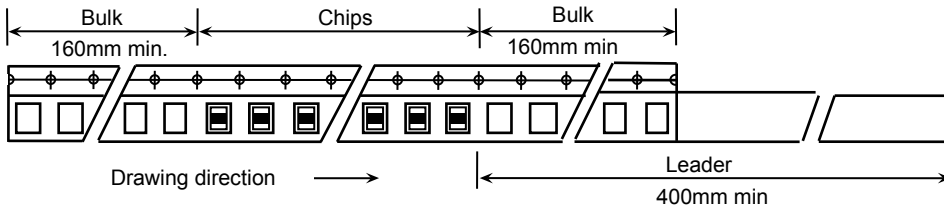
Insufficient solder Small solder fillet may cause contact failure or failure to hold the chip capacitor to the P.C. board.



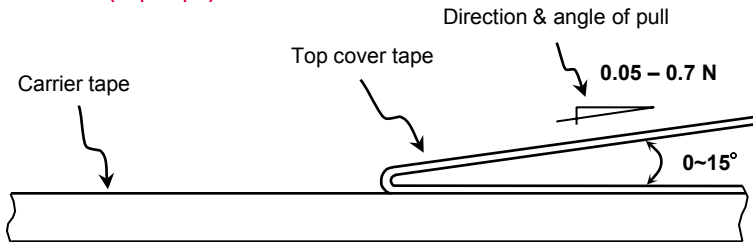
## Packaging Information

# C Series – General Application

### Carrier Tape Configuration

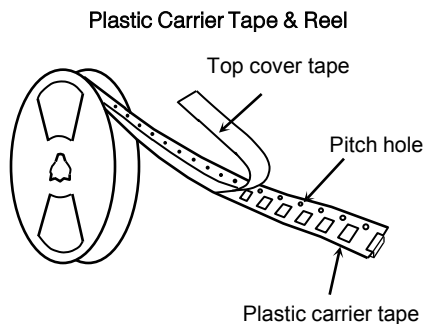
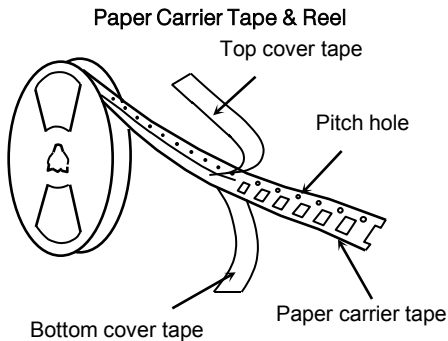


### Peel Back Force (Top Tape)



- Carrier tape shall be flexible enough to be wound around a minimum radius of 30mm with components in tape.
- The missing of components shall be less than 0.1%
- Components shall not stick to the cover tape.
- The cover tape shall not protrude beyond the edges of the carrier tape not shall cover the sprocket holes.

### Chip Quantity Per Reel and Structure of Reel (Paper & Plastic)



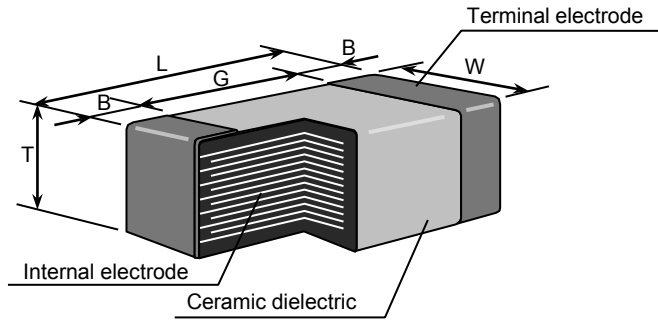
| Case Code |         | Chip Thickness | Taping Material | Chip quantity (pcs.) |                   |       |       |
|-----------|---------|----------------|-----------------|----------------------|-------------------|-------|-------|
| JIS       | EIA     |                |                 | φ178mm (7") reel     | φ330mm (13") reel |       |       |
| C0402     | CC01005 | 0.20 mm        | Paper           | 20,000               | -                 |       |       |
| C0603     | CC0201  | 0.30 mm        | Paper           | 15,000               | -                 |       |       |
| C1005     | CC0402  | 0.50 mm        | Paper           | 10,000               | 50,000            |       |       |
| C1608     | CC0603  | 0.80 mm        | Paper           | 4,000                | 10,000            |       |       |
| C2012     | CC0805  | 0.60 mm        | Paper/Plastic   | 4,000                | 20,000            |       |       |
|           |         | 0.85 mm        |                 |                      | 10,000            |       |       |
|           |         | 1.25 mm        | Plastic         |                      | 2,000             |       |       |
| C3216     | CC1206  | 0.60 mm        | Paper           | 4,000                | 10,000            |       |       |
|           |         | 0.85 mm        | Paper/Plastic   |                      |                   |       |       |
|           |         | 1.15 mm        | Plastic         |                      |                   | 2,000 |       |
|           |         | 1.30 mm        |                 |                      |                   |       |       |
|           |         | 1.60 mm        |                 |                      |                   |       |       |
| C3225     | CC1210  | 1.15 mm        | Plastic         | 2,000                | 10,000            |       |       |
|           |         | 1.25 mm        |                 |                      |                   |       |       |
|           |         | 1.30 mm        |                 |                      |                   |       |       |
|           |         | 1.60 mm        |                 |                      |                   |       |       |
|           |         | 2.00 mm        |                 |                      |                   | 1,000 | 5,000 |
|           |         | 2.30 mm        |                 |                      |                   |       |       |
|           |         | 2.50 mm        |                 |                      |                   |       |       |
| C4532     | CC1812  | 1.60 mm        | Plastic         | 1,000                | 3,000             |       |       |
|           |         | 2.00 mm        |                 |                      |                   |       |       |
|           |         | 2.30 mm        |                 |                      |                   |       |       |
|           |         | 2.50 mm        |                 |                      |                   | 500   | 2,000 |
|           |         | 2.80 mm        |                 |                      |                   |       |       |
| C5750     | CC2220  | 2.00 mm        | Plastic         | 500                  | 3,000             |       |       |
|           |         | 2.30 mm        |                 |                      |                   |       |       |
|           |         | 2.50 mm        |                 |                      |                   |       |       |
|           |         | 2.80 mm        |                 |                      |                   | 2,000 |       |



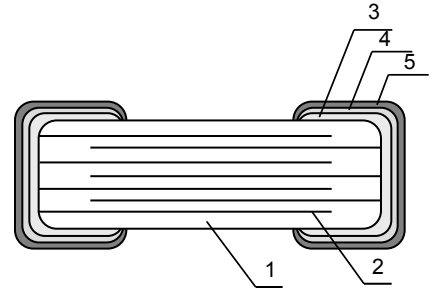
## Additional Information

# C Series – General Application

### • Shape & Dimensions



### • Inside Structure & Material System



| Case Code |         | Dimensions (mm) |      |      |           |           |
|-----------|---------|-----------------|------|------|-----------|-----------|
| JIS       | EIA     | L               | W    | T    | B         | G         |
| C0402     | CC01005 | 0.40            | 0.20 | 0.20 | 0.10      | 0.13 min. |
| C0603     | CC0201  | 0.60            | 0.30 | 0.30 | 0.15      | 0.20 min. |
| C1005     | CC0402  | 1.00            | 0.50 | 0.50 | 0.25      | 0.35 min. |
| C1608     | CC0603  | 1.60            | 0.80 | 0.50 | 0.30      | 0.50 min. |
|           |         |                 |      | 0.80 | 0.20 min. |           |
| C2012     | CC0805  | 2.00            | 1.20 | 0.60 | 0.20 min. | 0.50 min. |
|           |         |                 |      | 0.80 |           |           |
|           |         |                 |      | 0.85 |           |           |
|           |         |                 |      | 1.25 |           |           |
| C3216     | CC1206  | 3.20            | 1.60 | 0.60 | 0.20 min. | 1.00 min. |
|           |         |                 |      | 0.85 |           |           |
|           |         |                 |      | 1.15 |           |           |
|           |         |                 |      | 1.30 |           |           |
| C3225     | CC1210  | 3.20            | 2.50 | 1.15 | 0.20 min. | 1.00 min. |
|           |         |                 |      | 1.25 | 0.30 min. |           |
|           |         |                 |      | 1.30 |           |           |
|           |         |                 |      | 1.60 | 0.20 min. |           |
|           |         |                 |      | 2.00 | 0.30 min. |           |
| 2.30      |         |                 |      |      |           |           |
| 2.50      |         |                 |      |      |           |           |
| C4532     | CC1812  | 4.50            | 3.20 | 1.30 | 0.30 min. | 2.00 min. |
|           |         |                 |      | 1.60 | 0.20 min. |           |
|           |         |                 |      | 2.00 |           |           |
|           |         |                 |      | 2.30 | 0.30 min. |           |
|           |         |                 |      | 2.50 |           |           |
|           |         |                 |      | 2.80 |           |           |
| 3.20      |         |                 |      |      |           |           |
| C5750     | CC2220  | 5.70            | 5.0  | 1.60 | 0.20 min. | 2.00 min. |
|           |         |                 |      | 2.00 |           |           |
|           |         |                 |      | 2.30 |           |           |
|           |         |                 |      | 2.50 |           |           |
|           |         |                 |      | 2.80 |           |           |

| No. | NAME               | MATERIAL           |                    |
|-----|--------------------|--------------------|--------------------|
|     |                    | Class 1            | Class 2            |
| (1) | Ceramic Dielectric | CaZrO <sub>3</sub> | BaTiO <sub>3</sub> |
| (2) | Internal Electrode | Nickel (Ni)        |                    |
| (3) | Termination        | Copper (Cu)        |                    |
| (4) |                    | Nickel (Ni)        |                    |
| (5) |                    | Tin (Sn)           |                    |

### • Environmental Information

TDK Corporation established internal product environmental assurance standards that include the six hazardous substances banned by the EU RoHS Directive<sup>1</sup> enforced on July 1, 2006 along with additional substances independently banned by TDK and has successfully completed making general purpose electronic components conform to the RoHS Directive<sup>2</sup>.

1. Abbreviation for Restriction on Hazardous Substances, which refers to the regulation EU Directive 2002/95/EC on hazardous substances by the European Union (EU) effective from July 1, 2006. The Directive bans the use of six specific hazardous substances in electric and electronic devices and products handled within the EU. The six substances are lead, mercury, cadmium, hexavalent chromium, PBB (polybrominated biphenyls), and PBDE (polybrominated diphenyl ethers).
2. This means that, in conformity with the EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

For REACH (SVHC : 15 substances according to ECHA / October 2008) : All TDK MLCC do not contain these 15 substances.

For European Directive 2000/53/CE and 2005/673/CE : Cadmium, Hexavalent Chromium, Mercury, Lead are not contained in all TDK MLCC.

For European Directive 2003/11/CE : Pentabromodiphenyl-ether, Octabromodiphenyl-ether are not contained in all TDK MLCC.

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[CGA2B2C0G1H040C](#) [CGA2B2C0G1H050C](#) [CGA2B2C0G1H060D](#) [CGA2B2C0G1H070D](#) [CGA2B2C0G1H151J](#) [CGA2B2C0G1H1R5C](#)  
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