



## MULTILAYER CERAMIC CHIP CAPACITORS



### **CGA Series Automotive Grade Mid Voltage (100 to 630V)**

Type:

CGA2 [EIA CC0402]  
CGA3 [EIA CC0603]  
CGA4 [EIA CC0805]  
CGA5 [EIA CC1206]  
CGA6 [EIA CC1210]  
CGA8 [EIA CC1812]  
CGA9 [EIA CC2220]

Issue date:  
Mar 2015



## REMINDERS

Please read before using this product

### SAFETY REMINDERS



### REMINDERS

1. If you intend to use a product listed in this catalog for a purpose that may cause loss of life or other damage, you must contact our company's sales window.
2. We may modify products or discontinue production of a product listed in this catalog without prior notification.
3. We provide "Delivery Specification" that explain precautions for the specifications and safety of each product listed in this catalog. We strongly recommend that you exchange these delivery specifications with customers that use one of these products.
4. If you plan to export a product listed in this catalog, keep in mind that it may be a restricted item according to the "Foreign Exchange and Foreign Trade Control Law". In such cases, it is necessary to acquire export permission in harmony with this law.
5. Any reproduction or transferring of the contents of this catalog is prohibited without prior permission from our company.
6. We are not responsible for problems that occur related to the intellectual property rights or other rights of our company or a third party when you use a product listed in this catalog. We do not grant license of these rights.
7. This catalog only applies to products purchased through our company or one of our company's official agencies. This catalog does not apply to products that are purchased through other third parties.

Notice: Effective January 2013, TDK will use a new catalog number which adds product thickness and packaging specification detail. This new catalog number should be referenced on all catalog orders going forward, and is not applicable for OEM part number orders. Please be aware the last five digits of the catalog number will differ from the item description (internal control number) on the product label. Contact your local TDK Sales representative for more information.

(Example)

| Catalog Issued date    | Catalog Number      | Item Description (On Delivery Label) |
|------------------------|---------------------|--------------------------------------|
| Prior to January 2013  | C1608C0G1E103J      | C1608C0G1E103JT000N                  |
| January 2013 and Later | C1608C0G1E103J080AA | C1608C0G1E103JT000N                  |



## CGA Series

### Mid Voltage (100 to 630V)

Type: CGA2 [EIA CC0402], CGA3 [EIA CC0603], CGA4 [EIA CC0805], CGA5 [EIA CC1206], CGA6 [EIA CC1210], CGA8 [EIA CC1812], CGA9 [EIA CC2220]



#### Features



- Voltage rating of 100V to 630V with capacitance range up to 15 $\mu$ F.
- High capacitance has been achieved through precision technologies that enable the use of multiple thinner ceramic dielectric layers.
- Low residual inductance assures superior frequency characteristics.
- Excellent DC Bias properties.
- A lineup with wide-ranging rated voltages that enables selections that are suitable for needs.
- AEC-Q200 compliant.

#### Applications



- Application in decoupling, smoothing, and snubber circuits of inverters or DC-DC converters of HEVs or EVs
- Countermeasure against voltage surge and noise in connectors

#### Shape & Dimensions



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



#### Catalog Number Construction

**CGA • 9 • P • 3 • X7S • 2A • 156 • M • 250 • K • B**

#### Series Name

#### Dimensions L x W (mm)

| Code | Length      | Width       | Terminal  |
|------|-------------|-------------|-----------|
| 2    | 1.00 ± 0.05 | 0.50 ± 0.05 | 0.10 min. |
| 3    | 1.60 ± 0.10 | 0.80 ± 0.10 | 0.20 min. |
| 4    | 2.00 ± 0.20 | 1.25 ± 0.20 | 0.20 min. |
| 5    | 3.20 ± 0.20 | 1.60 ± 0.20 | 0.20 min. |
| 6    | 3.20 ± 0.40 | 2.50 ± 0.30 | 0.20 min. |
| 8    | 4.50 ± 0.40 | 3.20 ± 0.40 | 0.20 min. |
| 9    | 5.70 ± 0.40 | 5.00 ± 0.40 | 0.20 min. |

\*Dimension tolerance are typical values

#### Thickness T Code (mm)

| Code | Thickness |
|------|-----------|
| B    | 0.50 mm   |
| C    | 0.60 mm   |
| E    | 0.80 mm   |
| F    | 0.85 mm   |
| H    | 1.15 mm   |
| J    | 1.25 mm   |
| K    | 1.30 mm   |
| L    | 1.60 mm   |
| M    | 2.00 mm   |
| N    | 2.30 mm   |
| P    | 2.50 mm   |
| Q    | 2.80 mm   |
| R    | 3.20 mm   |

#### Voltage Condition for Life Test

| Symbol | Condition | Symbol | Condition  |
|--------|-----------|--------|------------|
| 1      | 1 x R.V.  | 3      | 1.5 x R.V. |
| 2      | 2 x R.V.  | 4      | 1.2 x R.V. |

#### Temperature Characteristics

| Temperature Characteristics | Temperature Coefficient or Capacitance Change | Temperature Range |
|-----------------------------|---|-------------------|
| C0G                         | 0±30 ppm/°C                                   | -55 to +125°C     |
| X7R                         | ±15%  | -55 to +125°C     |
| X7S                         | ±22%  | -55 to +125°C     |
| X7T                         | +22/-33%                                      | -55 to +125°C     |

#### Rated Voltage (DC)

| Code | Voltage (DC) |
|------|--------------|
| 2A   | 100V         |
| 2E   | 250V         |
| 2W   | 450V         |
| 2J   | 630V         |

#### 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. Ex. 0R2 = 0.2pF; 103 = 10,000pF; 105 = 1,000,000pF = 1,000nF = 1 $\mu$ F

#### Capacitance Tolerance

| Code | Tolerance |
|------|-----------|
| C    | ± 0.25pF  |
| D    | ± 0.50pF  |
| J    | ± 5%      |
| K    | ± 10%     |
| M    | ± 20%     |

#### Nominal Thickness

| Code | Thickness |
|------|-----------|
| 050  | 0.50 mm   |
| 060  | 0.60 mm   |
| 125  | 1.25 mm   |
| 230  | 2.30 mm   |
| 280  | 2.80 mm   |
| 320  | 3.20 mm   |

\*See Thickness T Code for complete list

#### Packaging Style

| Code | Style                   |
|------|-------------------------|
| A    | 178 mm Reel, 4 mm Pitch |
| B    | 178 mm Reel, 2 mm Pitch |
| K    | 178 mm Reel, 8 mm Pitch |

#### Special Reserved Code

| Code    | Description       |
|---------|-------------------|
| A, B, C | TDK Internal Code |



## Capacitance Range Chart

## CGA2(1005) [EIA CC0402]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ ), X7S ( $\pm 22\%$ )

Rated Voltage: 100V (2A)

| Capacitance (pF) | Code | Tolerance                                      | C0G       | X7S       |
|------------------|------|--|-----------|-----------|
|                  |      |  | 2A (100V) | 2A (100V) |
| 100              | 101  | J: $\pm 5\%$<br>K: $\pm 10\%$<br>M: $\pm 20\%$ | █         |           |
| 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  |  |           | █         |
| 1,500            | 152  |  |           |           |
| 2,200            | 222  |  |           |           |
| 3,300            | 332  |  |           |           |
| 4,700            | 472  |  |           |           |
| 6,800            | 682  |  |           |           |
| 10,000           | 103  |  |           |           |

Standard Thickness

█ 0.50 mm



## Capacitance Range Chart

## CGA3(1608) [EIA CC0603]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ ), X7R ( $\pm 15\%$ ), X7S ( $\pm 22\%$ )

Rated Voltage: 250V (2E), 100V (2A)





## Capacitance Range Chart

## CGA4(2012) [EIA CC0805]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ ), X7R ( $\pm 15\%$ ), X7S ( $\pm 22\%$ ), X7T ( $+22/-33\%$ )  
 Rated Voltage: 450V (2W), 250V (2E), 100V (2A)

| Capacitance (pF) | Code | Tolerance      | C0G       |           |           | X7R       |           | X7S       | X7T       |           |
|------------------|------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  |      |                | 2W (450V) | 2E (250V) | 2A (100V) | 2E (250V) | 2A (100V) | 2A (100V) | 2W (450V) | 2E (250V) |
| 100              | 101  | J : $\pm 5\%$  | █         |           | █         |           |           |           |           |           |
| 120              | 121  | K : $\pm 10\%$ | █         |           |           |           |           |           |           |           |
| 150              | 151  | M : $\pm 20\%$ | █         |           |           |           |           |           |           |           |
| 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  |                | █         | █         | █         |           |           |           |           |           |
| 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  |                |           | █         | █         | █         |           |           |           |           |
| 330,000          | 334  |                |           | █         | █         | █         |           |           |           |           |
| 470,000          | 474  |                |           | █         | █         | █         |           |           |           |           |
| 680,000          | 684  |                |           | █         | █         | █         |           |           |           |           |
| 1,000,000        | 105  |                |           | █         | █         | █         |           |           |           |           |

Standard Thickness





## Capacitance Range Chart

## CGA5(3216) [EIA CC1206]

### Capacitance Range Chart

Temperature Characteristics: C0G ( $0 \pm 30\text{ppm}/^\circ\text{C}$ ), X7R ( $\pm 15\%$ ), X7S ( $\pm 22\%$ ), X7T ( $+22/-33\%$ )

Rated Voltage: 630V (2J), 450V (2W), 250V (2E), 100V (2A)





## Capacitance Range Chart

# CGA6(3225) [EIA CC1210]

### Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/°C), X7R (±15%), X7S (±22%), X7T (+22/-33%)

Rated Voltage: 630V (2J), 450V (2W), 250V (2E), 100V (2A)

| Capacitance (pF) | Code | Tolerance | C0G       |           |           |           | X7R       |           |           | X7S       | X7T       |           |           |
|------------------|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  |      |           | 2J (630V) | 2W (450V) | 2E (250V) | 2A (100V) | 2J (630V) | 2E (250V) | 2A (100V) | 2A (100V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 3,900            | 392  | J : ± 5%  | █         |           |           |           |           |           |           |           |           |           |           |
| 4,700            | 472  | K : ± 10% | █         |           |           |           |           |           |           |           |           |           |           |
| 5,600            | 562  | M : ± 20% | █         |           |           |           |           |           |           |           |           |           |           |
| 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  |           |           |           |           |           |           | █         |           |           |           |           |           |
| 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  |           |           |           |           |           |           |           |           |           |           |           | █         |

Standard Thickness

- █ 1.25 mm
- █ 1.60 mm
- █ 2.00 mm
- █ 2.30 mm
- █ 2.50 mm





## Capacitance Range Chart

## CGA8(4532) [EIA CC1812]

### Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/°C), X7R (±15%), X7S (±22%), X7T (+22/-33%)  
 Rated Voltage: 630V (2J), 450V (2W), 250V (2E), 100V (2A)

| Capacitance (pF) | Code | Tolerance | C0G       |           |           |           | X7R       |           |           | X7S       | X7T       |           |           |
|------------------|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  |      |           | 2J (630V) | 2W (450V) | 2E (250V) | 2A (100V) | 2J (630V) | 2E (250V) | 2A (100V) | 2A (100V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 8,200            | 822  | J : ± 5%  | █         |           |           |           |           |           |           |           |           |           |           |
| 10,000           | 103  | K : ± 10% | █         |           |           |           |           |           |           |           |           |           |           |
| 15,000           | 153  | M : ± 20% | █         |           |           |           |           |           |           |           |           |           |           |
| 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  |           |           |           |           |           |           |           |           |           |           |           | █         |
| 1,500,000        | 155  |           |           |           |           |           |           |           |           |           |           |           |           |
| 2,200,000        | 225  |           |           |           |           |           |           |           |           |           |           |           |           |
| 3,300,000        | 335  |           |           |           |           |           |           |           |           |           |           |           |           |
| 4,700,000        | 475  |           |           |           |           |           |           |           |           |           |           |           |           |

Standard Thickness

- █ 1.60 mm
- █ 2.00 mm
- █ 2.30 mm
- █ 3.20 mm



## Capacitance Range Chart

## CGA9(5750) [EIA CC2220]

### Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/°C), X7R (±15%), X7S (±22%), X7T (+22/-33%)  
 Rated Voltage: 630V (2J), 450V (2W), 250V (2E), 100V (2A)

| Capacitance (pF) | Code | Tolerance | C0G       |           |           |           | X7R       |           |           | X7S       | X7T       |           |           |
|------------------|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  |      |           | 2J (630V) | 2W (450V) | 2E (250V) | 2A (100V) | 2J (630V) | 2E (250V) | 2A (100V) | 2A (100V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 68,000           | 683  | J : ± 5%  | █         |           |           |           |           |           |           |           |           |           |           |
| 100,000          | 104  | K : ± 10% | █         | █         |           |           |           |           |           |           |           |           |           |
| 150,000          | 154  | M : ± 20% |           |           | █         | █         | █         |           |           |           |           |           |           |
| 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  |           |           |           |           |           |           |           |           |           |           |           |           |
| 15,000,000       | 156  |           |           |           |           |           |           |           |           |           |           |           |           |

Standard Thickness

- █ 1.60 mm
- █ 2.00 mm
- █ 2.30 mm
- █ 2.50 mm
- █ 2.80 mm



## Capacitance Range Table

### Class 1 (Temperature Compensating)

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

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number          |                         |                         | Rated Voltage Edc: 100V |
|-------------|------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|             |      |                |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V |                         |
| 1 pF        | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A010C080AA    |
| 1.5 pF      | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A1R5C080AA    |
| 2 pF        | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A020C080AA    |
| 2.2 pF      | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A2R2C080AA    |
| 3 pF        | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A030C080AA    |
| 3.3 pF      | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A3R3C080AA    |
| 4 pF        | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A040C080AA    |
| 4.7 pF      | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A4R7C080AA    |
| 5 pF        | 1608 | 0.80 ± 0.10    | ± 0.25pF              |                         |                         |                         | CGA3E2C0G2A050C080AA    |
| 6 pF        | 1608 | 0.80 ± 0.10    | ± 0.50pF              |                         |                         |                         | CGA3E2C0G2A060D080AA    |
| 6.8 pF      | 1608 | 0.80 ± 0.10    | ± 0.50pF              |                         |                         |                         | CGA3E2C0G2A6R8D080AA    |
| 7 pF        | 1608 | 0.80 ± 0.10    | ± 0.50pF              |                         |                         |                         | CGA3E2C0G2A070D080AA    |
| 8 pF        | 1608 | 0.80 ± 0.10    | ± 0.50pF              |                         |                         |                         | CGA3E2C0G2A080D080AA    |
| 9 pF        | 1608 | 0.80 ± 0.10    | ± 0.50pF              |                         |                         |                         | CGA3E2C0G2A090D080AA    |
| 10 pF       | 1608 | 0.80 ± 0.10    | ± 0.50pF              |                         |                         |                         | CGA3E2C0G2A100D080AA    |
| 12 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A120J080AA    |
| 15 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A150J080AA    |
| 18 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A180J080AA    |
| 22 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A220J080AA    |
| 27 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A270J080AA    |
| 33 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A330J080AA    |
| 39 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A390J080AA    |
| 47 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A470J080AA    |
| 56 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A560J080AA    |
| 68 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A680J080AA    |
| 82 pF       | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A820J080AA    |
| 100 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A101J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E101J080AA    | CGA3E2C0G2A101J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W101J060AA    |                         |                         | CGA4C2C0G2A101J060AA    |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J101J060AA    |                         |                         |                         |
| 120 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A121J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E121J080AA    | CGA3E2C0G2A121J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W121J060AA    |                         |                         |                         |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J121J060AA    |                         |                         |                         |
| 150 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A151J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E151J080AA    | CGA3E2C0G2A151J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W151J060AA    |                         |                         |                         |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J151J060AA    |                         |                         |                         |
| 180 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A181J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E181J080AA    | CGA3E2C0G2A181J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W181J060AA    |                         |                         |                         |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J181J060AA    |                         |                         |                         |
| 220 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A221J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E221J080AA    | CGA3E2C0G2A221J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W221J060AA    |                         |                         | CGA4C2C0G2A221J060AA    |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J221J060AA    |                         |                         |                         |
| 270 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A271J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E271J080AA    | CGA3E2C0G2A271J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W271J060AA    |                         |                         |                         |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J271J060AA    |                         |                         |                         |
| 330 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A331J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E331J080AA    | CGA3E2C0G2A331J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W331J060AA    |                         |                         |                         |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J331J060AA    |                         |                         |                         |
| 390 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A391J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E391J080AA    | CGA3E2C0G2A391J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  | CGA4C4C0G2W391J060AA    |                         |                         |                         |
|             | 3216 | 0.60 ± 0.15    | ± 5%                  | CGA5C4C0G2J391J060AA    |                         |                         |                         |
| 470 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B2C0G2A471J050BA    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E471J080AA    | CGA3E2C0G2A471J080AA    |



## Capacitance Range Table

### Class 1 (Temperature Compensating)

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

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number          |                         |                         |                         |
|-------------|------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|             |      |                |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V | Rated Voltage Edc: 100V |
| 470 pF      | 2012 | 0.60 ± 0.15    | ± 5%                  |                         | CGA4C4C0G2W471J060AA    |                         | CGA4C2C0G2A471J060AA    |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J471J085AA    |                         |                         |                         |
| 560 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B1C0G2A561J050BC    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E561J080AA    | CGA3E2C0G2A561J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  |                         | CGA4C4C0G2W561J060AA    |                         |                         |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J561J085AA    |                         |                         |                         |
| 680 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B1C0G2A681J050BC    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E681J080AA    | CGA3E2C0G2A681J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  |                         | CGA4C4C0G2W681J060AA    |                         |                         |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J681J085AA    |                         |                         |                         |
| 820 pF      | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B1C0G2A821J050BC    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E821J080AA    | CGA3E2C0G2A821J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  |                         | CGA4C4C0G2W821J060AA    | CGA4C3C0G2E821J060AA    |                         |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J821J085AA    |                         |                         |                         |
| 1 nF        | 1005 | 0.50 ± 0.05    | ± 5%                  |                         |                         |                         | CGA2B1C0G2A102J050BC    |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E102J080AA    | CGA3E2C0G2A102J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  |                         | CGA4C4C0G2W102J060AA    |                         | CGA4C2C0G2A102J060AA    |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J102J085AA    |                         | CGA4F3C0G2E102J085AA    |                         |
| 1.2 nF      | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E122J080AA    | CGA3E2C0G2A122J080AA    |
|             | 2012 | 0.60 ± 0.15    | ± 5%                  |                         | CGA4C4C0G2W122J060AA    |                         | CGA4C2C0G2A122J060AA    |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J122J085AA    |                         |                         |                         |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E152J080AA    | CGA3E2C0G2A152J080AA    |
| 1.5 nF      | 2012 | 0.60 ± 0.15    | ± 5%                  |                         | CGA4F4C0G2W152J085AA    | CGA4F3C0G2E152J085AA    | CGA4C2C0G2A152J060AA    |
|             | 3216 | 1.15 ± 0.15    | ± 5%                  | CGA5H4C0G2J152J115AA    |                         |                         |                         |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         | CGA3E3C0G2E182J080AA    | CGA3E2C0G2A182J080AA    |
|             | 2012 | 0.85 ± 0.15    | ± 5%                  |                         | CGA4F4C0G2W182J085AA    |                         | CGA4F2C0G2A182J085AA    |
| 1.8 nF      | 3216 | 1.15 ± 0.15    | ± 5%                  | CGA5H4C0G2J182J115AA    |                         | CGA4J3C0G2E182J125AA    |                         |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A222J080AA    |
|             | 2012 | 0.85 ± 0.15    | ± 5%                  |                         | CGA4F4C0G2W222J085AA    |                         | CGA4F2C0G2A222J085AA    |
|             | 3216 | 1.15 ± 0.15    | ± 5%                  | CGA5H4C0G2J222J115AA    |                         | CGA4J3C0G2E222J125AA    |                         |
| 2.2 nF      | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A272J080AA    |
|             | 2012 | 1.25 ± 0.20    | ± 5%                  |                         | CGA4J4C0G2W272J125AA    | CGA4J3C0G2E272J125AA    | CGA4J2C0G2A272J125AA    |
|             | 3216 | 1.60 ± 0.20    | ± 5%                  | CGA5L4C0G2J272J160AA    |                         |                         |                         |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E2C0G2A332J080AA    |
| 3.3 nF      | 2012 | 0.85 ± 0.15    | ± 5%                  |                         |                         | CGA4F3C0G2E332J085AA    |                         |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  |                         | CGA4J4C0G2W332J125AA    |                         | CGA4J2C0G2A332J125AA    |
|             | 3216 | 1.60 ± 0.20    | ± 5%                  | CGA5L4C0G2J332J160AA    |                         | CGA5F3C0G2E332J085AA    |                         |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E1C0G2A392J080AC    |
| 3.9 nF      | 2012 | 1.25 ± 0.20    | ± 5%                  |                         | CGA4J4C0G2W392J125AA    | CGA4J3C0G2E392J125AA    | CGA4J2C0G2A392J125AA    |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J392J085AA    |                         |                         | CGA5C2C0G2A392J060AA    |
|             | 3216 | 1.15 ± 0.15    | ± 5%                  |                         |                         | CGA5H3C0G2E392J115AA    |                         |
|             | 3225 | 1.25 ± 0.20    | ± 5%                  | CGA6J4C0G2J392J125AA    |                         |                         |                         |
| 4.7 nF      | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E1C0G2A472J080AC    |
|             | 2012 | 1.25 ± 0.20    | ± 5%                  |                         | CGA4J4C0G2W472J125AA    | CGA4J3C0G2E472J125AA    | CGA4J2C0G2A472J125AA    |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  | CGA5F4C0G2J472J085AA    |                         |                         | CGA5F2C0G2A472J085AA    |
|             | 3216 | 1.15 ± 0.15    | ± 5%                  |                         |                         | CGA5H3C0G2E472J115AA    |                         |
| 5.6 nF      | 3225 | 1.60 ± 0.20    | ± 5%                  | CGA6L4C0G2J472J160AA    |                         |                         |                         |
|             | 1608 | 0.80 ± 0.10    | ± 5%                  |                         |                         |                         | CGA3E1C0G2A562J080AC    |
|             | 2012 | 1.25 ± 0.20    | ± 5%                  |                         | CGA4J4C0G2W562J125AA    | CGA4J3C0G2E562J125AA    | CGA4J2C0G2A562J125AA    |
|             | 3216 | 0.85 ± 0.15    | ± 5%                  |                         |                         |                         | CGA5F2C0G2A562J085AA    |
| 5.6 nF      | 3216 | 1.15 ± 0.15    | ± 5%                  | CGA5H4C0G2J562J115AA    |                         | CGA5H3C0G2E562J115AA    |                         |
|             | 3225 | 1.60 ± 0.20    | ± 5%                  | CGA6L4C0G2J562J160AA    |                         |                         |                         |



## Capacitance Range Table

### Class 1 (Temperature Compensating)

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

| Capacitance | Size        | Thickness (mm)       | Capacitance Tolerance | Catalog Number          |                         |                         |                         |
|-------------|-------------|----------------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|             |             |                      |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V | Rated Voltage Edc: 100V |
| 6.8 nF      | 1608        | 0.80 ± 0.10          | ± 5%                  |                         |                         |                         | CGA3E1C0G2A682J080AC    |
|             | 2012        | 1.25 ± 0.20          | ± 5%                  |                         |                         | CGA4J3C0G2E682J125AA    | CGA4J2C0G2A682J125AA    |
|             | 3216        | 1.15 ± 0.15          | ± 5%                  | CGA5H4C0G2J682J115AA    | CGA5H4C0G2W682J115AA    |                         | CGA5H2C0G2A682J115AA    |
|             |             | 1.60 ± 0.20          | ± 5%                  |                         |                         | CGA5L3C0G2E682J160AA    |                         |
|             | 3225        | 2.00 ± 0.20          | ± 5%                  | CGA6M4C0G2J682J200AA    |                         |                         |                         |
| 8.2 nF      | 1608        | 0.80 ± 0.10          | ± 5%                  |                         |                         |                         | CGA3E1C0G2A822J080AC    |
|             | 2012        | 1.25 ± 0.20          | ± 5%                  |                         |                         | CGA4J3C0G2E822J125AA    | CGA4J2C0G2A822J125AA    |
|             | 3216        | 1.15 ± 0.15          | ± 5%                  |                         | CGA5H4C0G2W822J115AA    |                         | CGA5H2C0G2A822J115AA    |
|             |             | 1.60 ± 0.20          | ± 5%                  | CGA5L4C0G2J822J160AA    |                         | CGA5L3C0G2E822J160AA    |                         |
| 8.2 nF      | 3225        | 1.25 ± 0.20          | ± 5%                  | CGA6J4C0G2J822J125AA    |                         |                         |                         |
|             | 4532        | 1.60 ± 0.20          | ± 5%                  | CGA8L4C0G2J822J160KA    |                         |                         |                         |
| 10 nF       | 1608        | 0.80 ± 0.10          | ± 5%                  |                         |                         |                         | CGA3E1C0G2A103J080AC    |
|             | 2012        | 1.25 ± 0.20          | ± 5%                  |                         |                         | CGA4J3C0G2E103J125AA    | CGA4J2C0G2A103J125AA    |
|             | 3216        | 1.15 ± 0.15          | ± 5%                  |                         |                         | CGA5H3C0G2E103J115AA    | CGA5H2C0G2A103J115AA    |
|             |             | 1.60 ± 0.20          | ± 5%                  | CGA5L4C0G2J103J160AA    | CGA5L4C0G2W103J160AA    |                         |                         |
|             | 3225        | 1.25 ± 0.20          | ± 5%                  | CGA6J4C0G2J103J125AA    |                         |                         |                         |
|             |             | 1.60 ± 0.20          | ± 5%                  |                         |                         | CGA6L3C0G2E103J160AA    |                         |
| 15 nF       | 4532        | 1.60 ± 0.20          | ± 5%                  | CGA8L4C0G2J103J160KA    |                         |                         |                         |
|             | 2012        | 0.85 ± 0.15          | ± 5%                  |                         |                         |                         | CGA4F1C0G2A153J085AC    |
|             |             | 1.15 ± 0.15          | ± 5%                  |                         |                         |                         | CGA5H2C0G2A153J115AA    |
|             |             | 1.60 ± 0.20          | ± 5%                  |                         |                         | CGA5L3C0G2E153J160AA    |                         |
|             | 3216        | 1.60 +0.3/-0.1       | ± 5%                  |                         | CGA5L4C0G2W153J160AA    |                         |                         |
|             |             | 1.25 ± 0.20          | ± 5%                  |                         |                         |                         | CGA6J2C0G2A153J125AA    |
|             | 3225        | 1.60 ± 0.20          | ± 5%                  | CGA6L4C0G2J153J160AA    |                         |                         |                         |
| 4532        | 2.00 ± 0.20 | ± 5%                 |                       |                         | CGA6M3C0G2E153J200AA    |                         |                         |
| 22 nF       | 4532        | 2.50 ± 0.30          | ± 5%                  | CGA8P4C0G2J153J250KA    |                         |                         |                         |
|             | 2012        | 1.25 ± 0.20          | ± 5%                  |                         |                         |                         | CGA4J1C0G2A223J125AC    |
|             |             | 1.60 ± 0.20          | ± 5%                  |                         |                         |                         | CGA5L2C0G2A223J160AA    |
|             | 3216        | 1.60 +0.3/-0.1       | ± 5%                  |                         |                         | CGA5L3C0G2E223J160AA    |                         |
|             |             | 1.60 ± 0.20          | ± 5%                  |                         |                         | CGA6L3C0G2E223J160AA    | CGA6L2C0G2A223J160AA    |
|             | 3225        | 2.30 ± 0.20          | ± 5%                  | CGA6N4C0G2J223J230AA    | CGA6N4C0G2W223J230AA    |                         |                         |
| 4532        | 1.60 ± 0.20 | ± 5%                 |                       |                         | CGA8L3C0G2E223J160KA    |                         |                         |
|             | 3.20 ± 0.30 | ± 5%                 | CGA8R4C0G2J223J320KA  |                         |                         |                         |                         |
|             | 1.25 ± 0.20 | ± 5%                 |                       |                         |                         | CGA4J1C0G2A333J125AC    |                         |
| 33 nF       | 3216        | 1.60 +0.3/-0.1       | ± 5%                  |                         |                         |                         | CGA5L2C0G2A333J160AA    |
|             |             | 2.00 ± 0.20          | ± 5%                  |                         |                         |                         | CGA6M2C0G2A333J200AA    |
|             | 3225        | 2.30 ± 0.20          | ± 5%                  |                         |                         | CGA6N3C0G2E333J230AA    |                         |
|             |             | 2.50 ± 0.30          | ± 5%                  | CGA6P4C0G2J333J250AA    | CGA6P4C0G2W333J250AA    |                         |                         |
|             | 4532        | 2.00 ± 0.20          | ± 5%                  | CGA8M4C0G2J333J200KA    |                         | CGA8M3C0G2E333J200KA    |                         |
| 47 nF       | 3216        | 1.15 ± 0.15          | ± 5%                  |                         |                         |                         | CGA5H1C0G2A473J115AC    |
|             | 3225        | 2.30 ± 0.20          | ± 5%                  |                         |                         |                         | CGA6N2C0G2A473J230AA    |
|             |             | 2.50 ± 0.30          | ± 5%                  |                         |                         | CGA6P3C0G2E473J250AA    |                         |
|             | 4532        | 2.00 ± 0.20          | ± 5%                  |                         |                         |                         | CGA8M2C0G2A473J200KA    |
|             |             | 2.30 ± 0.20          | ± 5%                  |                         | CGA8N4C0G2W473J230KA    |                         |                         |
| 3.20 ± 0.30 | ± 5%        | CGA8R4C0G2J473J320KA |                       | CGA8R3C0G2E473J320KA    |                         |                         |                         |
| 68 nF       | 3216        | 1.60 ± 0.20          | ± 5%                  |                         |                         |                         | CGA5L1C0G2A683J160AC    |
|             | 3225        | 2.30 ± 0.20          | ± 5%                  |                         |                         |                         | CGA6N2C0G2A683J230AA    |
|             |             | 2.30 ± 0.20          | ± 5%                  |                         |                         | CGA8N4C0G2E683J230KN    |                         |
|             | 4532        | 2.50 ± 0.30          | ± 5%                  |                         |                         |                         | CGA8P2C0G2A683J250KA    |
|             |             | 3.20 ± 0.30          | ± 5%                  |                         | CGA8R4C0G2W683J320KA    |                         |                         |
| 5750        | 2.30 ± 0.20 | ± 5%                 | CGA9N1C0G2J683J230KC  |                         |                         |                         |                         |
| 100 nF      | 3216        | 1.60 ± 0.20          | ± 5%                  |                         |                         |                         | CGA5L1C0G2A104J160AC    |
|             | 4532        | 3.20 ± 0.30          | ± 5%                  |                         |                         | CGA8R4C0G2E104J320KN    | CGA8R2C0G2A104J320KA    |
|             |             | 5750                 | 2.80 ± 0.30           | ± 5%                    | CGA9Q1C0G2J104J280KC    | CGA9Q4C0G2W104J280KA    |                         |
| 150nF       | 5750        | 2.30 ± 0.20          | ± 5%                  |                         | CGA9N4C0G2E154J230KN    | CGA9N2C0G2A154J230KA    |                         |



## Capacitance Range Table

### Class 2 (Temperature Stable)

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

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number          |                         |                         |                         |
|-------------|------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|             |      |                |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V | Rated Voltage Edc: 100V |
| 1 nF        | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A102K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A102M080AA    |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H4X7R2J102K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H4X7R2J102M115AA    |                         |                         |                         |
| 1.5 nF      | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A152K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A152M080AA    |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H4X7R2J152K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H4X7R2J152M115AA    |                         |                         |                         |
| 2.2 nF      | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A222K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A222M080AA    |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H4X7R2J222K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H4X7R2J222M115AA    |                         |                         |                         |
| 3.3 nF      | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A332K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A332M080AA    |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H4X7R2J332K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H4X7R2J332M115AA    |                         |                         |                         |
| 4.7 nF      | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A472K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A472M080AA    |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H4X7R2J472K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H4X7R2J472M115AA    |                         |                         |                         |
| 6.8 nF      | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A682K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A682M080AA    |
|             | 2012 | 1.25 ± 0.20    | ± 10%                 |                         | CGA4J3X7R2E682K125AA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA4J3X7R2E682M125AA    |                         |                         |
| 10 nF       | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H4X7R2J682K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H4X7R2J682M115AA    |                         |                         |                         |
|             | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A103K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A103M080AA    |
| 15 nF       | 2012 | 1.25 ± 0.20    | ± 10%                 |                         | CGA4J3X7R2E103K125AA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA4J3X7R2E103M125AA    |                         |                         |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H4X7R2J103K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H4X7R2J103M115AA    |                         |                         |                         |
| 22 nF       | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A153K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A153M080AA    |
|             | 2012 | 1.25 ± 0.20    | ± 10%                 |                         | CGA4J3X7R2E153K125AA    | CGA4J2X7R2A153K125AA    |                         |
|             |      |                | ± 20%                 |                         | CGA4J3X7R2E153M125AA    | CGA4J2X7R2A153M125AA    |                         |
| 33 nF       | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H3X7R2E153K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H3X7R2E153M115AA    |                         |                         |                         |
|             | 1608 | 0.80 ± 0.10    | ± 10%                 | CGA5K4X7R2J153K130AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5K4X7R2J153M130AA    |                         |                         |                         |
| 33 nF       | 2012 | 1.25 ± 0.20    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A223K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A223M080AA    |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA4J3X7R2E223K125AA    | CGA4J2X7R2A223K125AA    |                         |                         |
|             |      |                | ± 20%                 | CGA4J3X7R2E223M125AA    | CGA4J2X7R2A223M125AA    |                         |                         |
| 33 nF       | 3216 | 1.30 ± 0.20    | ± 10%                 | CGA5H3X7R2E223K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H3X7R2E223M115AA    |                         |                         |                         |
|             | 1608 | 0.80 ± 0.10    | ± 10%                 |                         |                         |                         | CGA3E2X7R2A223K080AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA3E2X7R2A223M080AA    |
| 33 nF       | 2012 | 1.25 ± 0.20    | ± 10%                 | CGA5K4X7R2J223K130AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5K4X7R2J223M130AA    |                         |                         |                         |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 |                         |                         |                         | CGA4J2X7R2A333K125AA    |
|             |      |                | ± 20%                 |                         |                         |                         | CGA4J2X7R2A333M125AA    |
| 33 nF       | 3216 | 1.60 ± 0.20    | ± 10%                 | CGA5H2X7R2A333K115AA    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H2X7R2A333M115AA    |                         |                         |                         |
|             | 2012 | 1.25 ± 0.20    | ± 10%                 | CGA5L4X7R2J333K160AA    |                         | CGA5L3X7R2E333K160AA    |                         |
|             |      |                | ± 20%                 | CGA5L4X7R2J333M160AA    |                         | CGA5L3X7R2E333M160AA    |                         |



## Capacitance Range Table

### Class 2 (Temperature Stable)

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

| Capacitance | Size        | Thickness (mm) | Capacitance Tolerance | Catalog Number          |                         |                         |                         |
|-------------|-------------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|             |             |                |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V | Rated Voltage Edc: 100V |
| 47 nF       | 2012        | 1.25 ± 0.20    | ± 10%                 |                         |                         |                         | CGA4J2X7R2A473K125AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA4J2X7R2A473M125AA    |
|             | 3216        | 1.15 ± 0.15    | ± 10%                 |                         |                         |                         | CGA5H2X7R2A473K115AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA5H2X7R2A473M115AA    |
|             |             | 1.60 ± 0.20    | ± 10%                 |                         |                         | CGA5L3X7R2E473K160AA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA5L3X7R2E473M160AA    |                         |
| 3225        | 2.00 ± 0.20 | ± 10%          | CGA6M4X7R2J473K200AA  |                         |                         |                         |                         |
|             |             | ± 20%          | CGA6M4X7R2J473M200AA  |                         |                         |                         |                         |
| 68 nF       | 3216        | 1.60 ± 0.20    | ± 10%                 |                         |                         | CGA5L3X7R2E683K160AA    | CGA5L2X7R2A683K160AA    |
|             |             |                | ± 20%                 |                         |                         | CGA5L3X7R2E683M160AA    | CGA5L2X7R2A683M160AA    |
|             | 3225        | 2.00 ± 0.20    | ± 10%                 | CGA6M4X7R2J683K200AA    |                         |                         |                         |
|             |             |                | ± 20%                 | CGA6M4X7R2J683M200AA    |                         |                         |                         |
| 4532        | 1.60 ± 0.20 | ± 10%          | CGA8L4X7R2J683K160KA  |                         |                         |                         |                         |
|             |             | ± 20%          | CGA8L4X7R2J683M160KA  |                         |                         |                         |                         |
| 100 nF      | 2012        | 1.25 ± 0.20    | ± 10%                 |                         |                         |                         | CGA4J2X7R2A104K125AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA4J2X7R2A104M125AA    |
|             | 3216        | 1.60 ± 0.20    | ± 10%                 |                         |                         | CGA5L3X7R2E104K160AA    | CGA5L2X7R2A104K160AA    |
|             |             |                | ± 20%                 |                         |                         | CGA5L3X7R2E104M160AA    | CGA5L2X7R2A104M160AA    |
|             | 3225        | 2.00 ± 0.20    | ± 10%                 |                         |                         | CGA6M3X7R2E104K200AA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA6M3X7R2E104M200AA    |                         |
| 4532        | 2.30 ± 0.20 | ± 10%          | CGA8N4X7R2J104K230KA  |                         |                         |                         |                         |
|             |             | ± 20%          | CGA8N4X7R2J104M230KA  |                         |                         |                         |                         |
| 150 nF      | 3216        | 1.60 ± 0.20    | ± 10%                 |                         |                         |                         | CGA5L2X7R2A154K160AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA5L2X7R2A154M160AA    |
|             | 3225        | 2.00 ± 0.20    | ± 10%                 |                         |                         | CGA6M3X7R2E154K200AA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA6M3X7R2E154M200AA    |                         |
|             | 4532        | 1.60 ± 0.20    | ± 10%                 |                         |                         | CGA8L3X7R2E154K160KA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA8L3X7R2E154M160KA    |                         |
| 5750        | 1.60 ± 0.20 | ± 10%          | CGA9L4X7R2J154K160KA  |                         |                         |                         |                         |
|             |             | ± 20%          | CGA9L4X7R2J154M160KA  |                         |                         |                         |                         |
| 220 nF      | 3216        | 1.15 ± 0.15    | ± 10%                 |                         |                         |                         | CGA5H2X7R2A224K115AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA5H2X7R2A224M115AA    |
|             | 3225        | 2.00 ± 0.20    | ± 10%                 |                         |                         | CGA6M3X7R2E224K200AA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA6M3X7R2E224M200AA    |                         |
|             | 4532        | 2.30 ± 0.20    | ± 10%                 |                         |                         | CGA8N3X7R2E224K230KA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA8N3X7R2E224M230KA    |                         |
| 5750        | 2.30 ± 0.20 | ± 10%          | CGA9N4X7R2J224K230KA  |                         |                         |                         |                         |
|             |             | ± 20%          | CGA9N4X7R2J224M230KA  |                         |                         |                         |                         |
| 330 nF      | 3216        | 1.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA5K2X7R2A334K130AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA5K2X7R2A334M130AA    |
|             | 3225        | 2.00 ± 0.20    | ± 10%                 |                         |                         |                         | CGA6M2X7R2A334K200AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA6M2X7R2A334M200AA    |
|             | 4532        | 2.30 ± 0.20    | ± 10%                 |                         |                         | CGA8N3X7R2E334K230KA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA8N3X7R2E334M230KA    |                         |
| 5750        | 1.60 ± 0.20 | ± 10%          |                       |                         | CGA9L3X7R2E334K160KA    |                         |                         |
|             |             | ± 20%          |                       |                         | CGA9L3X7R2E334M160KA    |                         |                         |
| 470 nF      | 3216        | 1.60 ± 0.20    | ± 10%                 |                         |                         |                         | CGA5L2X7R2A474K160AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA5L2X7R2A474M160AA    |
|             | 3225        | 2.00 ± 0.20    | ± 10%                 |                         |                         |                         | CGA6M2X7R2A474K200AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA6M2X7R2A474M200AA    |
|             | 4532        | 2.30 ± 0.20    | ± 10%                 |                         |                         | CGA8N3X7R2E474K230KA    |                         |
|             |             |                | ± 20%                 |                         |                         | CGA8N3X7R2E474M230KA    |                         |
| 5750        | 2.30 ± 0.20 | ± 10%          |                       |                         | CGA9N3X7R2E474K230KA    |                         |                         |
|             |             | ± 20%          |                       |                         | CGA9N3X7R2E474M230KA    |                         |                         |



## Capacitance Range Table

### Class 2 (Temperature Stable)

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

| Capacitance | Size        | Thickness (mm) | Capacitance Tolerance | Catalog Number          |                         |                         |                         |
|-------------|-------------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|             |             |                |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V | Rated Voltage Edc: 100V |
| 680 nF      | 3216        | 1.60 ± 0.20    | ± 10%                 |                         |                         |                         | CGA5L2X7R2A684K160AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA5L2X7R2A684M160AA    |
|             | 3225        | 1.60 ± 0.20    | ± 10%                 |                         |                         |                         | CGA6L2X7R2A684K160AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA6L2X7R2A684M160AA    |
|             | 4532        | 2.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA8N2X7R2A684K230KA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA8N2X7R2A684M230KA    |
| 5750        | 2.30 ± 0.20 | ± 10%          |                       |                         | CGA9N3X7R2E684K230KA    | CGA9L2X7R2A684K160KA    |                         |
|             |             | ± 20%          |                       |                         | CGA9N3X7R2E684M230KA    | CGA9L2X7R2A684M160KA    |                         |
| 1 µF        | 3216        | 1.60 ± 0.20    | ± 10%                 |                         |                         |                         | CGA5L2X7R2A105K160AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA5L2X7R2A105M160AA    |
|             | 3225        | 2.00 ± 0.20    | ± 10%                 |                         |                         |                         | CGA6M2X7R2A105K200AA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA6M2X7R2A105M200AA    |
|             | 4532        | 2.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA8N2X7R2A105K230KA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA8N2X7R2A105M230KA    |
| 5750        | 2.30 ± 0.20 | ± 10%          |                       |                         | CGA9N3X7R2E105K230KA    | CGA9N2X7R2A105K230KA    |                         |
|             |             | ± 20%          |                       |                         | CGA9N3X7R2E105M230KA    | CGA9N2X7R2A105M230KA    |                         |
| 1.5 µF      | 3225        | 2.00 ± 0.20    | ± 10%                 |                         |                         |                         | CGA6M3X7R2A155K200AB    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA6M3X7R2A155M200AB    |
|             | 4532        | 2.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA8N2X7R2A155K230KA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA8N2X7R2A155M230KA    |
| 5750        | 2.30 ± 0.20 | ± 10%          |                       |                         |                         | CGA9N2X7R2A155K230KA    |                         |
|             |             | ± 20%          |                       |                         |                         | CGA9N2X7R2A155M230KA    |                         |
| 2.2 µF      | 3225        | 2.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA6N3X7R2A225K230AB    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA6N3X7R2A225M230AB    |
|             | 4532        | 2.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA8N2X7R2A225K230KA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA8N2X7R2A225M230KA    |
| 5750        | 2.30 ± 0.20 | ± 10%          |                       |                         |                         | CGA9N2X7R2A225K230KA    |                         |
|             |             | ± 20%          |                       |                         |                         | CGA9N2X7R2A225M230KA    |                         |
| 3.3 µF      | 5750        | 2.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA9N2X7R2A335K230KA    |
| 4.7 µF      | 5750        | 2.30 ± 0.20    | ± 10%                 |                         |                         |                         | CGA9N2X7R2A475K230KA    |
|             |             |                | ± 20%                 |                         |                         |                         | CGA9N2X7R2A475M230KA    |





## Capacitance Range Table

### Class 2 (Temperature Stable)

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

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number          |                         |                         |
|-------------|------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|
|             |      |                |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V |
| 1 nF        | 1005 | 0.50 ± 0.05    | ± 10%                 | CGA2B3X7S2A102K050BB    |                         |                         |
|             |      |                | ± 20%                 | CGA2B3X7S2A102M050BB    |                         |                         |
| 1.5 nF      | 1005 | 0.50 ± 0.05    | ± 10%                 | CGA2B3X7S2A152K050BB    |                         |                         |
|             |      |                | ± 20%                 | CGA2B3X7S2A152M050BB    |                         |                         |
| 2.2 nF      | 1005 | 0.50 ± 0.05    | ± 10%                 | CGA2B3X7S2A222K050BB    |                         |                         |
|             |      |                | ± 20%                 | CGA2B3X7S2A222M050BB    |                         |                         |
| 3.3 nF      | 1005 | 0.50 ± 0.05    | ± 10%                 | CGA2B3X7S2A332K050BB    |                         |                         |
|             |      |                | ± 20%                 | CGA2B3X7S2A332M050BB    |                         |                         |
| 4.7 nF      | 1005 | 0.50 ± 0.05    | ± 10%                 | CGA2B3X7S2A472K050BB    |                         |                         |
|             |      |                | ± 20%                 | CGA2B3X7S2A472M050BB    |                         |                         |
| 6.8 nF      | 1005 | 0.50 ± 0.05    | ± 10%                 | CGA2B3X7S2A682K050BB    |                         |                         |
|             |      |                | ± 20%                 | CGA2B3X7S2A682M050BB    |                         |                         |
| 10 nF       | 1005 | 0.50 ± 0.05    | ± 10%                 | CGA2B3X7S2A103K050BB    |                         |                         |
|             |      |                | ± 20%                 | CGA2B3X7S2A103M050BB    |                         |                         |
| 33 nF       | 1608 | 0.80 ± 0.10    | ± 10%                 | CGA3E3X7S2A333K080AB    |                         |                         |
|             |      |                | ± 20%                 | CGA3E3X7S2A333M080AB    |                         |                         |
| 47 nF       | 1608 | 0.80 ± 0.10    | ± 10%                 | CGA3E3X7S2A473K080AB    |                         |                         |
|             |      |                | ± 20%                 | CGA3E3X7S2A473M080AB    |                         |                         |
| 68 nF       | 1608 | 0.80 ± 0.10    | ± 10%                 | CGA3E3X7S2A683K080AB    |                         |                         |
|             |      |                | ± 20%                 | CGA3E3X7S2A683M080AB    |                         |                         |
| 100 nF      | 1608 | 0.80 ± 0.10    | ± 10%                 | CGA3E3X7S2A104K080AB    |                         |                         |
|             |      |                | ± 20%                 | CGA3E3X7S2A104M080AB    |                         |                         |
| 330 nF      | 2012 | 1.25 ± 0.20    | ± 10%                 | CGA4J3X7S2A334K125AB    |                         |                         |
|             |      |                | ± 20%                 | CGA4J3X7S2A334M125AB    |                         |                         |
| 470 nF      | 2012 | 1.25 ± 0.20    | ± 10%                 | CGA4J3X7S2A474K125AB    |                         |                         |
|             |      |                | ± 20%                 | CGA4J3X7S2A474M125AB    |                         |                         |
| 680 nF      | 2012 | 1.25 ± 0.20    | ± 10%                 | CGA4J3X7S2A684K125AB    |                         |                         |
|             |      |                | ± 20%                 | CGA4J3X7S2A684M125AB    |                         |                         |
| 1 µF        | 2012 | 1.25 ± 0.20    | ± 10%                 | CGA4J3X7S2A105K125AB    |                         |                         |
|             |      |                | ± 20%                 | CGA4J3X7S2A105M125AB    |                         |                         |
| 1.5 µF      | 3216 | 1.60 ± 0.20    | ± 10%                 | CGA5L3X7S2A155K160AB    |                         |                         |
|             |      |                | ± 20%                 | CGA5L3X7S2A155M160AB    |                         |                         |
| 2.2 µF      | 3216 | 1.60 ± 0.20    | ± 10%                 | CGA5L3X7S2A225K160AB    |                         |                         |
|             |      |                | ± 20%                 | CGA5L3X7S2A225M160AB    |                         |                         |
| 3.3 µF      | 3216 | 1.60 ± 0.20    | ± 10%                 | CGA5L3X7S2A335K160AB    |                         |                         |
|             |      |                | ± 20%                 | CGA5L3X7S2A335M160AB    |                         |                         |
| 3.3 µF      | 3225 | 2.00 ± 0.20    | ± 10%                 | CGA6M3X7S2A335K200AB    |                         |                         |
|             |      |                | ± 20%                 | CGA6M3X7S2A335M200AB    |                         |                         |
| 4.7 µF      | 4532 | 2.00 ± 0.20    | ± 10%                 | CGA8M3X7S2A335K200KB    |                         |                         |
|             |      |                | ± 20%                 | CGA8M3X7S2A335M200KB    |                         |                         |
| 4.7 µF      | 3225 | 2.00 ± 0.20    | ± 10%                 | CGA6M3X7S2A475K200AB    |                         |                         |
|             |      |                | ± 20%                 | CGA6M3X7S2A475M200AB    |                         |                         |
| 6.8 µF      | 4532 | 2.30 ± 0.20    | ± 10%                 | CGA8N3X7S2A475K230KB    |                         |                         |
|             |      |                | ± 20%                 | CGA8N3X7S2A475M230KB    |                         |                         |
| 6.8 µF      | 5750 | 2.00 ± 0.20    | ± 10%                 | CGA9M3X7S2A685K200KB    |                         |                         |
|             |      |                | ± 20%                 | CGA9M3X7S2A685M200KB    |                         |                         |
| 10 µF       | 5750 | 2.30 ± 0.20    | ± 10%                 | CGA9N3X7S2A106K230KB    |                         |                         |
|             |      |                | ± 20%                 | CGA9N3X7S2A106M230KB    |                         |                         |
| 15 µF       | 5750 | 2.50 ± 0.30    | ± 20%                 | CGA9P3X7S2A156M250KB    |                         |                         |





## Capacitance Range Table

### Class 2 (Temperature Stable)

Temperature Characteristics: X7T (-55 to +125°C, +22/-33%)

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number          |                         |                         |                         |
|-------------|------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|             |      |                |                       | Rated Voltage Edc: 630V | Rated Voltage Edc: 450V | Rated Voltage Edc: 250V | Rated Voltage Edc: 100V |
| 22 nF       | 2012 | 1.25 ± 0.20    | ± 10%                 |                         | CGA4J4X7T2W223K125AA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA4J4X7T2W223M125AA    |                         |                         |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H1X7T2J223K115AC    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H1X7T2J223M115AC    |                         |                         |                         |
| 33 nF       | 2012 | 1.25 ± 0.20    | ± 10%                 |                         | CGA4J4X7T2W333K125AA    | CGA4J3X7T2E333K125AA    |                         |
|             |      |                | ± 20%                 |                         | CGA4J4X7T2W333M125AA    | CGA4J3X7T2E333M125AA    |                         |
|             | 3216 | 1.15 ± 0.15    | ± 10%                 | CGA5H1X7T2J333K115AC    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5H1X7T2J333M115AC    |                         |                         |                         |
| 47 nF       | 2012 | 1.25 ± 0.20    | ± 10%                 |                         | CGA4J4X7T2W473K125AA    | CGA4J3X7T2E473K125AA    |                         |
|             |      |                | ± 20%                 |                         | CGA4J4X7T2W473M125AA    | CGA4J3X7T2E473M125AA    |                         |
|             | 3216 | 1.60 ± 0.20    | ± 10%                 | CGA5L1X7T2J473K160AC    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA5L1X7T2J473M160AC    |                         |                         |                         |
| 68 nF       | 2012 | 1.25 ± 0.20    | ± 10%                 |                         |                         | CGA4J3X7T2E683K125AA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA4J3X7T2E683M125AA    |                         |
|             | 3216 | 1.30 ± 0.20    | ± 10%                 |                         | CGA5K4X7T2W683K130AA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA5K4X7T2W683M130AA    |                         |                         |
| 100 nF      | 2012 | 1.25 ± 0.20    | ± 10%                 |                         |                         | CGA4J3X7T2E104K125AA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA4J3X7T2E104M125AA    |                         |
|             | 3216 | 1.60 ± 0.20    | ± 10%                 |                         | CGA5L4X7T2W104K160AA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA5L4X7T2W104M160AA    |                         |                         |
| 150 nF      | 3216 | 1.30 ± 0.20    | ± 10%                 |                         |                         | CGA5K3X7T2E154K130AA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA5K3X7T2E154M130AA    |                         |
|             | 3225 | 2.00 ± 0.20    | ± 10%                 | CGA6M1X7T2J154K200AC    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA6M1X7T2J154M200AC    |                         |                         |                         |
| 220 nF      | 4532 | 1.60 ± 0.20    | ± 10%                 | CGA8L1X7T2J154K160KC    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA8L1X7T2J154M160KC    |                         |                         |                         |
|             | 3216 | 1.60 ± 0.20    | ± 10%                 |                         |                         | CGA5L3X7T2E224K160AA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA5L3X7T2E224M160AA    |                         |
| 330 nF      | 3225 | 2.00 ± 0.20    | ± 10%                 |                         | CGA6M4X7T2W224K200AA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA6M4X7T2W224M200AA    |                         |                         |
|             | 4532 | 2.00 ± 0.20    | ± 10%                 | CGA8M1X7T2J224K200KC    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA8M1X7T2J224M200KC    |                         |                         |                         |
| 470 nF      | 3225 | 2.00 ± 0.20    | ± 10%                 |                         |                         | CGA6M3X7T2E334K200AA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA6M3X7T2E334M200AA    |                         |
|             | 4532 | 1.60 ± 0.20    | ± 10%                 |                         | CGA8L4X7T2W334K160KA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA8L4X7T2W334M160KA    |                         |                         |
| 680 nF      | 5750 | 2.00 ± 0.20    | ± 10%                 | CGA9M1X7T2J334K200KC    |                         |                         |                         |
|             |      |                | ± 20%                 | CGA9M1X7T2J334M200KC    |                         |                         |                         |
|             | 4532 | 1.60 ± 0.20    | ± 10%                 |                         |                         | CGA8L3X7T2E684K160KA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA8L3X7T2E684M160KA    |                         |
| 1 µF        | 5750 | 2.00 ± 0.20    | ± 10%                 |                         | CGA9M4X7T2W684K200KA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA9M4X7T2W684M200KA    |                         |                         |
|             | 4532 | 2.50 ± 0.30    | ± 10%                 |                         |                         | CGA8P3X7T2E105K250KA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA8P3X7T2E105M250KA    |                         |
| 1.5 µF      | 5750 | 2.00 ± 0.20    | ± 10%                 |                         | CGA9P4X7T2W105K250KA    |                         |                         |
|             |      |                | ± 20%                 |                         | CGA9P4X7T2W105M250KA    |                         |                         |
|             | 4532 | 2.50 ± 0.30    | ± 10%                 |                         |                         | CGA9M3X7T2E155K200KA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA9M3X7T2E155M200KA    |                         |
| 2.2 µF      | 5750 | 2.50 ± 0.30    | ± 10%                 |                         |                         | CGA9P3X7T2E225K250KA    |                         |
|             |      |                | ± 20%                 |                         |                         | CGA9P3X7T2E225M250KA    |                         |