

MULTILAYER CERAMIC CHIP CAPACITORS

C Series Commercial Grade Soft Termination

Type:

**C1005 [EIA CC0402]
C1608 [EIA CC0603]
C2012 [EIA CC0805]
C3216 [EIA CC1206]
C3225 [EIA CC1210]
C4520 [EIA CC1808]
C4532 [EIA CC1812]
C5750 [EIA CC2220]
C7563 [EIA CC3025]**



REMINDERS

Please read before using this product

SAFETY REMINDERS

REMINDERS

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(Example)

| Catalog Issued date | Catalog Number | Item Description (On Delivery Label) |
|------------------------|-----------------------|--------------------------------------|
| Prior to January 2013 | C1608C0G1E103J(080AA) | C1608C0G1E103JT000N |
| January 2013 and Later | C1608C0G1E103J080AA | C1608C0G1E103JT000N |

MULTILAYER CERAMIC CHIP CAPACITORS



C Series Soft Termination

Type: C1005 [EIA CC0402], C1608 [EIA CC0603], C2012 [EIA CC0805], C3216 [EIA CC1206], C3225 [EIA CC1210], C4520 [EIA CC1808], C4532 [EIA CC1812], C5750 [EIA CC2220], C7563 [EIA CC3025]

Features

- Improved board bending resistance, drop impact resistance, thermal shock resistance, and heat cycle properties.
- Conductive resin absorb external stress to protect solder joint parts and capacitor body.
- Compliance with the RoHS Directive.

Standard Product



Soft Termination



Applications

- Switching power supply
- Telecom base station
- Electronic circuits mounted on alumina substrate
- SMT application which requires bending robustness in which solder joint reliability is problematic

Shape & Dimensions



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

Catalog Number Construction

C • 7563 • X7S • 1C • 107 • M • 280 • L • E

Series Name

Dimensions L x W (mm)

| Code | Length | Width | Terminal |
|-------|-------------------|-------------------|-----------|
| C1005 | 1.00 + 0.15/-0.05 | 0.50 + 0.10/-0.05 | 0.10 min. |
| C1608 | 1.60 + 0.20/-0.10 | 0.80 + 0.15/-0.10 | 0.20 min. |
| C2012 | 2.00 + 0.45/-0.20 | 1.25 + 0.25/-0.20 | 0.20 min. |
| C3216 | 3.20 + 0.40/-0.20 | 1.60 + 0.30/-0.20 | 0.20 min. |
| C3225 | 3.20 + 0.50/-0.40 | 2.50 ± 0.30 | 0.20 min. |
| C4520 | 4.50 + 0.30/-0.20 | 2.00 ± 0.15 | 0.20 min. |
| C4532 | 4.50 + 0.50/-0.40 | 3.20 ± 0.40 | 0.20 min. |
| C5750 | 5.70 + 0.50/-0.40 | 5.00 ± 0.40 | 0.20 min. |
| C7563 | 7.50 ± 0.50 | 6.30 ± 0.50 | 0.30 min. |

*Dimension tolerance are typical values

Temperature Characteristics

| Temperature Characteristics | Temperature Coefficient or Capacitance Change | Temperature Range |
|-----------------------------|---|-------------------|
| C0G | 0 ±30ppm/°C | -55 to +125°C |
| X7R | ±15% | -55 to +125°C |
| X7S | ±22% | -55 to +125°C |
| X7T | +22/-33% | -55 to +125°C |
| X8R | ±15% | -55 to +150°C |

Rated Voltage (DC)

| Code | Voltage (DC) |
|------|--------------|
| 1A | 10V |
| 1C | 16V |
| 1E | 25V |
| 1V | 35V |
| 1H | 50V |
| 2A | 100V |
| 2E | 250V |
| 2W | 450V |
| 2J | 630V |
| 3A | 1000V |
| 3D | 2000V |
| 3F | 3000V |

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

Capacitance Tolerance

| Code | Tolerance |
|------|-----------|
| J | ± 5% |
| K | ± 10% |
| M | ± 20% |

Nominal Thickness

| Code | Thickness |
|------|-----------|
| 050 | 0.50 mm |
| 080 | 0.80 mm |
| 085 | 0.85 mm |
| 115 | 1.15 mm |
| 125 | 1.25 mm |
| 130 | 1.30 mm |
| 160 | 1.60 mm |
| 200 | 2.00 mm |
| 230 | 2.30 mm |
| 250 | 2.50 mm |
| 280 | 2.80 mm |

Packaging Style

| Code | Style |
|------|------------------------|
| A | 178mm Reel, 4mm Pitch |
| B | 178mm Reel, 2mm Pitch |
| K | 178mm Reel, 8mm Pitch |
| L | 330mm Reel, 12mm Pitch |

Special Reserved Code

| Code | Description |
|------|------------------|
| E | Soft Termination |

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance Range Chart

EIA CC0402[C1005]

Capacitance Range Chart

Temperature Characteristics : C0G(0±30ppm/°C) , X7R(±15%) , X8R(±15%)
 Rated Voltage : 100V(2A) , 50V(1H) , 35V(1V) , 25V(1E) , 16V(1C)



Capacitance Range Chart

EIA CC0603 [C1608]

Capacitance Range Chart

Temperature Characteristics : C0G(0±30ppm/°C) , X7R(±15%) , X7S(±22%) , X8R(±15%)
 Rated Voltage : 100V(2A) , 50V(1H) , 35V(1V) , 25V(1E) , 16V(1C) , 10V(1A)



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Capacitance Range Chart

EIA CC0805 [C2012]

Capacitance Range Chart

Temperature Characteristics : X7R($\pm 15\%$), X7S($\pm 22\%$), X7T($+22/-33\%$)

Rated Voltage : 450V(2W), 250V(2E), 100V(2A), 50V(1H), 35V(1V), 25V(1E), 16V(1C), 10V(1A)

| Capacitance | | Tolerance | X7R | | | | | | | X7S | X7T | |
|-------------|------|--------------------------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|
| (pF) | Code | | 2E (250V) | 2A (100V) | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 2A (100V) | 2W (450V) | 2E (250V) |
| 1,000 | 102 | K: $\pm 10\%$ M: $\pm 20\%$ | 0.85 mm | 0.85 mm | | | | | | | | |
| 2,200 | 222 | | | | | | | | | | | |
| 4,700 | 472 | | | | | | | | | | | |
| 10,000 | 103 | | 0.85 mm | | | | | | | | 0.85 mm | |
| 22,000 | 223 | | 0.85 mm | | | | | | | | 0.85 mm | |
| 47,000 | 473 | | | | | | | | | | | 0.85 mm |
| 100,000 | 104 | | | 0.85 mm | | | | | | | | 0.85 mm |
| 220,000 | 224 | | | | | | | | | 0.85 mm | | |
| 470,000 | 474 | | | | | | | | | | | 0.85 mm |
| 1,000,000 | 105 | | | | | | | | | 0.85 mm | | |
| 2,200,000 | 225 | | | | | | | | | | | 0.85 mm |
| 4,700,000 | 475 | | | | | | | | | | | 0.85 mm |
| 10,000,000 | 106 | | | | | | | | | | | 0.85 mm |

Standard Thickness

0.85 mm
1.25 mm

Capacitance Range Chart

Temperature Characteristics : X8R($\pm 15\%$)

Rated Voltage : 100V(2A), 50V(1H), 25V(1E), 16V(1C)

| Capacitance | | Tolerance | X8R | | | |
|-------------|------|--------------------------------|--------------|-------------|-------------|-------------|
| (pF) | Code | | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 22,000 | 223 | K: $\pm 10\%$ M: $\pm 20\%$ | 0.85 mm | | | |
| 33,000 | 333 | | | | | |
| 47,000 | 473 | | | | | |
| 68,000 | 683 | | 0.85 mm | | | |
| 100,000 | 104 | | | | | |
| 150,000 | 154 | | | | | |
| 220,000 | 224 | | | | | |
| 330,000 | 334 | | | | | |
| 470,000 | 474 | | | | | |
| 680,000 | 684 | | | | | |
| 1,000,000 | 105 | | | | | |

Standard Thickness

0.85 mm
1.25 mm

Capacitance Range Chart

EIA CC1206 [C3216]

Capacitance Range Chart

Temperature Characteristics : X7R($\pm 15\%$), X7S($\pm 22\%$)

Rated Voltage : 630V(2J), 250V(2E), 100V(2A), 50V(1H), 35V(1V), 25V(1E), 16V(1C)



Capacitance Range Chart

Temperature Characteristics : X7T(+22/-33%), X8R($\pm 15\%$)

Rated Voltage : 630V(2J), 450V(2W), 250V(2E), 100V(2A), 50V(1H), 25V(1E), 16V(1C)



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Capacitance Range Chart

EIA CC1210 [C3225]

Capacitance Range Chart

Temperature Characteristics : X7R(±15%), X7S(±22%), X7T(+22/-33%), X8R(±15%)
 Rated Voltage : 630V(2J), 450V(2W), 250V(2E), 100V(2A), 50V(1H), 25V(1E)

| Capacitance | | Tolerance | X7R | | | | X7S | | X7T | | | X8R | |
|-------------|------|----------------------|-----------|-----------|-----------|----------|-----------|----------|-----------|-----------|-----------|-----------|----------|
| (pF) | Code | | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 2A (100V) | 1H (50V) | 2J (630V) | 2W (450V) | 2E (250V) | 2A (100V) | 1E (25V) |
| 47,000 | 473 | K: ± 10% M: ± 20% | █ | | | | | | | | | | |
| 68,000 | 683 | | | | | | | | | | | | |
| 100,000 | 104 | | | █ | | | | | █ | | | | |
| 150,000 | 154 | | | | | | | | █ | █ | | | |
| 220,000 | 224 | | | █ | | | | | | | | | |
| 330,000 | 334 | | | | | | | | | | █ | | |
| 470,000 | 474 | | | | | █ | | | | | | █ | |
| 680,000 | 684 | | | | | | | | | | | █ | |
| 1,000,000 | 105 | | | | | █ | | | | | | █ | |
| 2,200,000 | 225 | | | | | █ | █ | | | | | | |
| 3,300,000 | 335 | | | | | | | █ | | | | | |
| 4,700,000 | 475 | | | | | | | | █ | █ | | | |
| 10,000,000 | 106 | | | | | | | | | | | | █ |

Standard Thickness 1.60 mm 2.00 mm 2.30 mm 2.50 mm

Capacitance Range Chart

EIA CC1808 [C4520]

Capacitance Range Chart

Temperature Characteristics : X7R (±15%)
 Rated Voltage : 2000V (3D)

| Capacitance | | Tolerance | X7R |
|-------------|------|----------------------|------------|
| (pF) | Code | | 3D (2000V) |
| 1,000 | 102 | K: ± 10% M: ± 20% | █ |

Standard Thickness 1.30 mm

Capacitance Range Chart

EIA CC1812 [C4532]

Capacitance Range Chart

Temperature Characteristics : C0G(0±30ppm/°C), X7R (±15%), X7T (+22/-33%)
 Rated Voltage : 3000V(3F), 2000V(3D), 630V(2J), 450V(2W), 250V(2E)

| Capacitance | | Tolerance | C0G | X7R | | | | X7T | | |
|-------------|------|-----------|------------|------------|-----------|-----------|-----------|-----------|-----------|--|
| (pF) | Code | | 3F (3000V) | 3D (2000V) | 2J (630V) | 2E (250V) | 2J (630V) | 2W (450V) | 2E (250V) | |
| 330 | 331 | K: ± 10% | █ | | | | | | | |
| 2,200 | 222 | | M: ± 20% | | █ | | | | | |
| 100,000 | 104 | | | | █ | | | | | |
| 220,000 | 224 | | | | | | █ | | | |
| 470,000 | 474 | | | | | █ | | █ | | |
| 1,000,000 | 105 | | | | | | | | █ | |

Standard Thickness 1.30 mm 2.00 mm 2.30 mm 2.50 mm

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Capacitance Range Chart

EIA CC2220 [C5750]

Capacitance Range Chart

Temperature Characteristics : X7R ($\pm 15\%$), X7S ($\pm 22\%$), X7T ($+22/-33\%$)
 Rated Voltage : 630V (2J), 450V (2W), 250V (2E), 100V (2A)

| Capacitance | | Tolerance | X7R | | X7S | X7T | | |
|-------------|------|--------------------------------|---|---|---|---|---|---|
| (pF) | Code | | 2J (630V) | 2E (250V) | 2A (100V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 220,000 | 224 | K: $\pm 10\%$ M: $\pm 20\%$ |  | | |  | | |
| 470,000 | 474 | | | | | | | |
| 1,000,000 | 105 | | |  | | |  | |
| 2,200,000 | 225 | | | | | | |  |
| 10,000,000 | 106 | | | |  | | | |

Standard Thickness

 2.30 mm

 2.50 mm

Capacitance Range Chart

EIA CC3025 [C7563]


Capacitance Range Chart

Temperature Characteristics : X7S ($\pm 22\%$)
 Rated Voltage : 50V (1H), 16V (1C)

| Capacitance | | Tolerance | X7S | |
|-------------|------|---------------|--|--|
| (pF) | Code | | 1H (50V) | 1C (16V) |
| 22,000,000 | 226 | M: $\pm 20\%$ |  | |
| 100,000,000 | 107 | | |  |

Standard Thickness

 2.30 mm

 2.80 mm

MULTILAYER CERAMIC CHIP CAPACITORS



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 : 250V | Rated Voltage Edc : 100V | Rated Voltage Edc : 50V |
| 68nF | 3225 | 2.00+0.30/-0.20 | ±10% | C3225X7R2J683K200AE | | | |
| | | | ±20% | C3225X7R2J683M200AE | | | |
| 100nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | C1005X7R1H104K050BE |
| | | | ±20% | | | | C1005X7R1H104M050BE |
| | 1608 | 0.80 +0.15/-0.10 | ±10% | | | | C1608X7R1H104K080AE |
| | | | ±20% | | | | C1608X7R1H104M080AE |
| | 2012 | 1.25 +0.25/-0.20 | ±10% | | | C2012X7R2A104K125AE | C2012X7R1H104K125AE |
| | | | ±20% | | | C2012X7R2A104M125AE | C2012X7R1H104M125AE |
| 3216 | 1.60 +0.30/-0.20 | ±10% | | C3216X7R2E104K160AE | C3216X7R2A104K160AE | | |
| | | ±20% | | C3216X7R2E104M160AE | C3216X7R2A104M160AE | | |
| 3225 | 2.00 +0.30/-0.20 | ±10% | | C3225X7R2E104K200AE | | | |
| | | ±20% | | C3225X7R2E104M200AE | | | |
| 4532 | 2.30+0.30/-0.20 | ±10% | C4532X7R2J104K230KE | | | | |
| | | ±20% | C4532X7R2J104M230KE | | | | |
| 220nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | | C1608X7R1H224K080AE |
| | | | ±20% | | | | C1608X7R1H224M080AE |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | | C2012X7R1H224K125AE |
| | | | ±20% | | | | C2012X7R1H224M125AE |
| | 3216 | 1.15±0.15 | ±10% | | | C3216X7R2A224K115AE | |
| | | | ±20% | | | | C3216X7R2A224M115AE |
| 3225 | 2.00 +0.30/-0.20 | ±10% | | C3225X7R2E224K200AE | | | |
| | | ±20% | | C3225X7R2E224M200AE | | | |
| 5750 | 2.30+0.30/-0.20 | ±10% | C5750X7R2J224K230KE | | | | |
| | | ±20% | C5750X7R2J224M230KE | | | | |
| 470nF | 1608 | 0.80 +0.15/-0.10 | ±10% | | | | C1608X7R1H474K080AE |
| | | | ±20% | | | | C1608X7R1H474M080AE |
| | 2012 | 1.25 +0.25/-0.20 | ±10% | | | | C2012X7R1H474K125AE |
| | | | ±20% | | | | C2012X7R1H474M125AE |
| | 3216 | 1.60 +0.30/-0.20 | ±10% | | | C3216X7R2A474K160AE | |
| | | | ±20% | | | | C3216X7R2A474M160AE |
| 3225 | 2.00+0.30/-0.20 | ±10% | | | C3225X7R2A474K200AE | | |
| | | ±20% | | | | C3225X7R2A474M200AE | |
| 4532 | 2.00 +0.30/-0.20 | ±10% | | C4532X7R2E474K230KE | | | |
| | | ±20% | | C4532X7R2E474M230KE | | | |
| 1µF | 2012 | 1.25 +0.25/-0.20 | ±10% | | | | C2012X7R1H105K125AE |
| | | | ±20% | | | | C2012X7R1H105M125AE |
| | 3216 | 1.60 +0.30/-0.20 | ±10% | | C3216X7R2A105K160AE | C3216X7R1H105K160AE | |
| | | | ±20% | | C3216X7R2A105M160AE | C3216X7R1H105M160AE | |
| | 3225 | 2.00+0.30/-0.20 | ±10% | | C3225X7R2A105K200AE | | |
| | | | ±20% | | C3225X7R2A105M200AE | | |
| 5750 | 2.00 +0.30/-0.20 | ±10% | | C5750X7R2E105K230KE | | | |
| | | ±20% | | C5750X7R2E105M230KE | | | |
| 2.2µF | 2012 | 1.25 +0.25/-0.20 | ±10% | | | | C2012X7R1H225K125AE |
| | | | ±20% | | | | C2012X7R1H225M125AE |
| | 3216 | 1.60 +0.30/-0.20 | ±10% | | | | C3216X7R1H225K160AE |
| | | | ±20% | | | | C3216X7R1H225M160AE |
| | 3225 | 2.00+0.30/-0.20 | ±10% | | | | C3225X7R1H225K200AE |
| | | | ±20% | | | | C3225X7R1H225M200AE |
| 3225 | 2.30 +0.30/-0.20 | ±10% | | C3225X7R2A225K230AE | | | |
| | | ±20% | | C3225X7R2A225M230AE | | | |
| 4.7µF | 3216 | 1.60 +0.30/-0.20 | ±10% | | | | C3216X7R1H475K160AE |
| | | | ±20% | | | | C3216X7R1H475M160AE |

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MULTILAYER CERAMIC CHIP CAPACITORS



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 : 35V | Rated Voltage Edc : 25V | Rated Voltage Edc : 16V | Rated Voltage Edc : 10V |
| 220nF | 1005 | 0.50 +0.10/-0.05 | ±10% | C1005X7R1V224K050BE | C1005X7R1E224K050BE | C1005X7R1C224K050BE | |
| | | | ±20% | C1005X7R1V224M050BE | C1005X7R1E224M050BE | C1005X7R1C224M050BE | |
| 470nF | 1608 | 0.80 +0.15/-0.10 | ±10% | C1608X7R1V474K080AE | C1608X7R1E474K080AE | | |
| | | | ±20% | C1608X7R1V474M080AE | C1608X7R1E474M080AE | | |
| 1µF | 1608 | 0.80 +0.15/-0.10 | ±10% | C1608X7R1V105K080AE | C1608X7R1E105K080AE | | |
| | | | ±20% | C1608X7R1V105M080AE | C1608X7R1E105M080AE | | |
| | 2012 | 1.25 +0.25/-0.20 | ±10% | C2012X7R1V105K125AE | | | |
| | | | ±20% | C2012X7R1V105M125AE | | | |
| 1608 | 0.80 +0.15/-0.10 | ±10% | | | | C1608X7R1A225K080AE | |
| | | ±20% | | | | C1608X7R1A225M080AE | |
| 2.2µF | 2012 | 1.25 +0.25/-0.20 | ±10% | C2012X7R1V225K125AE | C2012X7R1E225K125AE | | |
| | | | ±20% | C2012X7R1V225M125AE | C2012X7R1E225M125AE | | |
| 3216 | 1.60 +0.30/-0.20 | ±10% | C3216X7R1V225K160AE | C3216X7R1E225K160AE | | | |
| | | | ±20% | C3216X7R1V225M160AE | C3216X7R1E225M160AE | | |
| 4.7µF | 2012 | 1.25 +0.25/-0.20 | ±10% | C2012X7R1V475K125AE | C2012X7R1E475K125AE | C2012X7R1C475K125AE | |
| | | | ±20% | C2012X7R1V475M125AE | C2012X7R1E475M125AE | C2012X7R1C475M125AE | |
| | 3216 | 1.60 +0.30/-0.20 | ±10% | C3216X7R1V475K160AE | C3216X7R1E475K160AE | | |
| | | | ±20% | C3216X7R1V475M160AE | C3216X7R1E475M160AE | | |
| 2012 | 1.25 +0.25/-0.20 | ±10% | | | | C2012X7R1A106K125AE | |
| | | ±20% | | | | C2012X7R1A106M125AE | |
| 10µF | 3216 | 1.60 +0.30/-0.20 | ±10% | C3216X7R1V106K160AE | C3216X7R1E106K160AE | C3216X7R1C106K160AE | |
| | | | ±20% | C3216X7R1V106M160AE | C3216X7R1E106M160AE | C3216X7R1C106M160AE | |

Class 2 (Temperature Stable)

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

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number | | |
|-------------|------------------|------------------|-----------------------|--------------------------|-------------------------|-------------------------|
| | | | | Rated Voltage Edc : 100V | Rated Voltage Edc : 50V | Rated Voltage Edc : 16V |
| 47nF | 1608 | 0.80 +0.15/-0.10 | ±10% | C1608X7S2A473K080AE | | |
| | | | ±20% | C1608X7S2A473M080AE | | |
| 100nF | 1608 | 0.80 +0.15/-0.10 | ±10% | C1608X7S2A104K080AE | | |
| | | | ±20% | C1608X7S2A104M080AE | | |
| 220nF | 2012 | 0.85±0.15 | ±10% | C2012X7S2A224K085AE | | |
| | | | ±20% | C2012X7S2A224M085AE | | |
| 470nF | 2012 | 1.25 +0.25/-0.20 | ±10% | C2012X7S2A474K125AE | | |
| | | | ±20% | C2012X7S2A474M125AE | | |
| 1µF | 2012 | 1.25 +0.25/-0.20 | ±10% | C2012X7S2A105K125AE | | |
| | | | ±20% | C2012X7S2A105M125AE | | |
| 2.2µF | 3216 | 1.60 +0.30/-0.20 | ±10% | C3216X7S2A225K160AE | | |
| | | | ±20% | C3216X7S2A225M160AE | | |
| 3.3µF | 3225 | 2.00 +0.30/-0.20 | ±10% | C3225X7S2A335K200AE | | |
| | | | ±20% | C3225X7S2A335M200AE | | |
| 4.7µF | 3225 | 2.00 +0.30/-0.20 | ±10% | C3225X7S2A475K200AE | | |
| | | | ±20% | C3225X7S2A475M200AE | | |
| | 2.30 +0.30/-0.20 | ±10% | | C3225X7S1H475K230AE | | |
| | | ±20% | | C3225X7S1H475M230AE | | |
| 3225 | 2.50 ±0.30 | ±10% | | C3225X7S1H106K250AE | | |
| | | ±20% | | C3225X7S1H106M250AE | | |
| 10µF | 5750 | 2.30 +0.30/-0.20 | ±10% | C5750X7S2A106K230KE | | |
| | | | ±20% | C5750X7S2A106M230KE | | |
| 22µF | 7563 | 2.30 (2.50max.) | ±20% | | C7563X7S1H226M230LE | |
| 100µF | 7563 | 2.80 (3.00max.) | ±20% | | | C7563X7S1C107M280LE |

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MULTILAYER CERAMIC CHIP CAPACITORS



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 | |
| 10 nF | 2012 | 0.85 ± 0.15 | ± 10% | C2012X7T2W103K085AE | | | |
| | | | ± 20% | C2012X7T2W103M085AE | | | |
| 22 nF | 2012 | 1.25 +0.25/-0.20 | ± 10% | C2012X7T2W223K125AE | | | |
| | | | ± 20% | C2012X7T2W223M125AE | | | |
| 47 nF | 2012 | 1.25 +0.25/-0.20 | ± 10% | C2012X7T2W473K125AE | C2012X7T2E473K125AE | | |
| | | | ± 20% | C2012X7T2W473M125AE | C2012X7T2E473M125AE | | |
| | 3216 | 1.60 +0.30/-0.20 | ± 10% | C3216X7T2J473K160AE | | | |
| | | | ± 20% | C3216X7T2J473M160AE | | | |
| 2012 | 1.25 +0.25/-0.20 | ±10% | | C2012X7T2E104K125AE | | | |
| | | ±20% | | C2012X7T2E104M125AE | | | |
| 100 nF | 3216 | 1.60 +0.30/-0.20 | ±10% | C3216X7T2W104K160AE | | | |
| | | | ±20% | C3216X7T2W104M160AE | | | |
| 3225 | 1.60 +0.30/-0.20 | 1.60 +0.30/-0.20 | ±10% | C3225X7T2J104K160AE | | | |
| | | | ±20% | C3225X7T2J104M160AE | | | |
| 150nF | 3225 | 2.00 +0.30/-0.20 | ±10% | C3225X7T2J154K200AE | | | |
| | | | ±20% | C3225X7T2J154M200AE | | | |
| 220 nF | 3216 | 1.60 +0.30/-0.20 | ±10% | | C3216X7T2E224K160AE | | |
| | | | ±20% | | C3216X7T2E224M160AE | | |
| | 3225 | 2.00 +0.30/-0.20 | ±10% | C3225X7T2W224K200AE | | | |
| | | | ±20% | C3225X7T2W224M200AE | | | |
| 4532 | 2.00 +0.30/-0.20 | 2.00 +0.30/-0.20 | ±10% | C4532X7T2J224K200KE | | | |
| | | | ±20% | C4532X7T2J224M200KE | | | |
| 330nF | 3225 | 2.00 +0.30/-0.20 | ±10% | | C3225X7T2E334K200AE | | |
| | | | ±20% | | C3225X7T2E334M200AE | | |
| 470 nF | 4532 | 2.30 +0.30/-0.20 | ±10% | C4532X7T2W474K230KE | | | |
| | | | ±20% | C4532X7T2W474M230KE | | | |
| | 5750 | 2.50 ± 0.30 | 2.50 ± 0.30 | ±10% | C5750X7T2J474K250KE | | |
| | | | | ±20% | C5750X7T2J474M250KE | | |
| 1 μF | 4532 | 2.50 ± 0.30 | ± 10% | | C4532X7T2E105K250KE | | |
| | | | ± 20% | | C4532X7T2E105M250KE | | |
| 5750 | 2.50 ± 0.30 | 2.50 ± 0.30 | ± 10% | C5750X7T2W105K250KE | | | |
| | | | ± 20% | C5750X7T2W105M250KE | | | |
| 2.2 uF | 5750 | 2.50 ± 0.30 | ± 10% | | C5750X7T2E225K250KE | | |
| | | | ± 20% | | C5750X7T2E225M250KE | | |

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X8R (-55 to +150°C, ±15%)

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number | | | |
|-------------|-----------------|-----------------|-----------------------|--------------------------|-------------------------|-------------------------|-------------------------|
| | | | | Rated Voltage Edc : 100V | Rated Voltage Edc : 50V | Rated Voltage Edc : 25V | Rated Voltage Edc : 16V |
| 68nF | 1608 | 0.80+0.15/-0.10 | ±10% | | C1608X8R1H683K080AE | C1608X8R1E683K080AE | |
| | | | ±20% | | C1608X8R1H683M080AE | C1608X8R1E683M080AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | C2012X8R2A683K125AE | C2012X8R1H683K125AE | | |
| | | | ±20% | C2012X8R2A683M125AE | C2012X8R1H683M125AE | | |
| 100nF | 1608 | 0.80+0.15/-0.10 | ±10% | | C1608X8R1H104K080AE | C1608X8R1E104K080AE | |
| | | | ±20% | | C1608X8R1H104M080AE | C1608X8R1E104M080AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | C2012X8R1H104K125AE | | |
| | | | ±20% | | C2012X8R1H104M125AE | | |
| | 3216 | 1.15±0.15 | ±10% | C3216X8R2A104K115AE | | | |
| | | | ±20% | C3216X8R2A104M115AE | | | |
| 150nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | C1608X8R1E154K080AE | |
| | | | ±20% | | | C1608X8R1E154M080AE | |
| | 2012 | 0.85±0.15 | ±10% | | | C2012X8R1E154K085AE | |
| | | | ±20% | | | C2012X8R1E154M085AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | C2012X8R1H154K125AE | | |
| | | | ±20% | | C2012X8R1H154M125AE | | |
| 3216 | 1.60+0.30/-0.20 | ±10% | C3216X8R2A154K160AE | | | | |
| | | ±20% | C3216X8R2A154M160AE | | | | |
| 220nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | C1608X8R1E224K080AE | |
| | | | ±20% | | | C1608X8R1E224M080AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | C2012X8R1H224K125AE | C2012X8R1E224K125AE | |
| | | | ±20% | | C2012X8R1H224M125AE | C2012X8R1E224M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | C3216X8R2A224K160AE | | | |
| | | | ±20% | C3216X8R2A224M160AE | | | |
| 330nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | | C1608X8R1C334K080AE |
| | | | ±20% | | | | C1608X8R1C334M080AE |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | C2012X8R1E334K125AE | |
| | | | ±20% | | | C2012X8R1E334M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | C3216X8R2A334K160AE | C3216X8R1H334K160AE | | |
| | | | ±20% | C3216X8R2A334M160AE | C3216X8R1H334M160AE | | |
| 470nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | | C1608X8R1C474K080AE |
| | | | ±20% | | | | C1608X8R1C474M080AE |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | C2012X8R1E474K125AE | |
| | | | ±20% | | | C2012X8R1E474M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | C3216X8R1H474K160AE | | |
| | | | ±20% | | C3216X8R1H474M160AE | | |
| 3225 | 2.00+0.30/-0.20 | ±10% | C3225X8R2A474K200AE | | | | |
| | | ±20% | C3225X8R2A474M200AE | | | | |
| 680nF | 2012 | 1.25+0.25/-0.20 | ±10% | | | | C2012X8R1C684K125AE |
| | | | ±20% | | | | C2012X8R1C684M125AE |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | C3216X8R1H684K160AE | | |
| | | | ±20% | | C3216X8R1H684M160AE | | |
| 3225 | 2.50±0.30 | ±10% | C3225X8R2A684K250AE | | | | |
| | | ±20% | C3225X8R2A684M250AE | | | | |
| 1µF | 2012 | 1.25+0.25/-0.20 | ±10% | | | | C2012X8R1C105K125AE |
| | | | ±20% | | | | C2012X8R1C105M125AE |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | C3216X8R1H105K160AE | C3216X8R1E105K160AE | |
| | | | ±20% | | C3216X8R1H105M160AE | C3216X8R1E105M160AE | |
| 1.5µF | 3216 | 1.60+0.30/-0.20 | ±10% | | | | C3216X8R1E155K160AE |
| | | | ±20% | | | | C3216X8R1E155M160AE |
| 2.2µF | 3216 | 1.60+0.30/-0.20 | ±10% | | | | C3216X8R1E225K160AE |
| | | | ±20% | | | | C3216X8R1E225M160AE |
| 3.3µF | 3216 | 1.60+0.30/-0.20 | ±10% | | | | C3216X8R1C335K160AE |
| | | | ±20% | | | | C3216X8R1C335M160AE |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | | C3216X8R1C475K160AE |
| | | | ±20% | | | | C3216X8R1C475M160AE |
| 4.7µF | 3225 | 2.50±0.30 | ±10% | | | | C3225X8R1E475K250AE |
| | | | ±20% | | | | C3225X8R1E475M250AE |

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