

MULTILAYER CERAMIC CHIP CAPACITORS



CGA Series Automotive Grade Soft Termination

Type:

**CGA2 [EIA CC0402]
CGA3 [EIA CC0603]
CGA4 [EIA CC0805]
CGA5 [EIA CC1206]
CGA6 [EIA CC1210]
CGA7 [EIA CC1808]
CGA8 [EIA CC1812]
CGA9 [EIA CC2220]**



REMINDERS

Please read before using this product

SAFETY REMINDERS

REMINDERS

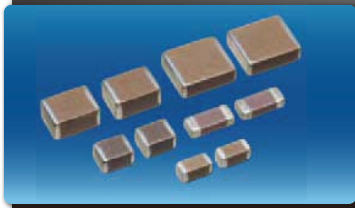
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Notice: Effective January 2013, TDK will use a new catalog number which adds product thickness and packaging specification detail. This new catalog number should be referenced on all catalog orders going forward, and is not applicable for OEM part 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(080AA) | C1608C0G1E103JT000N |
| January 2013 and Later | C1608C0G1E103J080AA | C1608C0G1E103JT000N |

MULTILAYER CERAMIC CHIP CAPACITORS



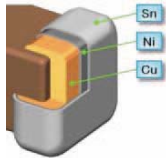
CGA Series Soft Termination

Type: CGA2 [EIA CC0402], CGA3 [EIA CC0603], CGA4 [EIA CC0805], CGA5 [EIA CC1206], CGA6 [EIA CC1210], CGA7 [EIA CC1808], CGA8 [EIA CC1812], CGA9 [EIA CC2220]

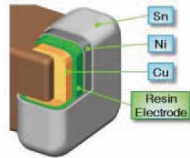
Features

- 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.
- AEC-Q200 compliant.

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

CGA • 6 • P • 3 • X7S • 1H • 106 • K • 250 • A • E

Series Name

Dimensions L x W (mm)

| Code | Length | Width | Terminal |
|------|-------------------|-------------------|-----------|
| 2 | 1.00 + 0.15/-0.05 | 0.50 + 0.10/-0.05 | 0.10 min. |
| 3 | 1.60 + 0.20/-0.10 | 0.80 + 0.15/-0.10 | 0.20 min. |
| 4 | 2.00 + 0.45/-0.20 | 1.25 + 0.25/-0.20 | 0.20 min. |
| 5 | 3.20 + 0.40/-0.20 | 1.60 + 0.30/-0.20 | 0.20 min. |
| 6 | 3.20 + 0.50/-0.40 | 2.50 ± 0.30 | 0.20 min. |
| 7 | 4.50 + 0.30/-0.20 | 2.00 ± 0.15 | 0.20 min. |
| 8 | 4.50 + 0.50/-0.40 | 3.20 ± 0.40 | 0.20 min. |
| 9 | 5.70 + 0.50/-0.40 | 5.00 ± 0.40 | 0.20 min. |

*Dimension tolerance are typical values

Thickness T Code (mm)

| Code | Thickness |
|------|-----------|
| B | 0.50 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 |

Voltage Condition for Life Test

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

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) | Code | Voltage (DC) |
|------|--------------|------|--------------|
| 0J | 6.3V | 2E | 250V |
| 1A | 10V | 2W | 450V |
| 1C | 16V | 2J | 630V |
| 1E | 25V | 3A | 1000V |
| 1V | 35V | 3D | 2000V |
| 1H | 50V | 3F | 3000V |
| 2A | 100V | | |

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 = 1µF

Capacitance Tolerance

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

Nominal Thickness

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

Packaging Style

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

Special Reserved Code

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

*See Thickness T Code for complete list

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance Range Chart

CGA2(1005) [EIA CC0402]

Capacitance Range Chart

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

| Capacitance | | Tolerance | C0G | X7R | | | | | X7S | | X8R | | | |
|-------------|------|-----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|--|
| (pF) | Code | | 1H (50V) | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1C (16V) | 1A (10V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) | |
| 100 | 101 | J: ±5% | ■ | | | | | | | | | | | |
| 150 | 151 | K: ±10% | | | | | | | | | | | | |
| 220 | 221 | M: ±20% | | | | | | | | ■ | ■ | | | |
| 330 | 331 | | | | | | | | | | | | | |
| 470 | 471 | | | | | | | | | | | | | |
| 680 | 681 | | | | | | | | | | | | | |
| 1,000 | 102 | | | ■ | | | | | | | | | | |
| 1,500 | 152 | | | | | | | | | | | | | |
| 2,200 | 222 | | | ■ | | | | | | | | | | |
| 3,300 | 332 | | | | | | | | | | | | | |
| 4,700 | 472 | | | ■ | | | | | | | | | | |
| 6,800 | 682 | | | | | | | | | | | | | |
| 10,000 | 103 | | | ■ | | | | | | | | | | |
| 15,000 | 153 | | | | | | | | | | | | | |
| 22,000 | 223 | | | ■ | | | | | | | | | | |
| 33,000 | 333 | | | | | | | | | | | | | |
| 47,000 | 473 | | | ■ | | | | | | | | | | |
| 100,000 | 104 | | | ■ | | | | | | | | | | |
| 220,000 | 224 | | | | ■ | ■ | ■ | | | | | | | |
| 470,000 | 474 | | | | | | | ■ | ■ | | | | | |

Standard Thickness 0.50 mm

Capacitance Range Chart

CGA3(1608) [EIA CC0603]

Capacitance Range Chart

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

| Capacitance | | Tolerance | C0G | X7R | | | | | X7S | | | X8R | | | |
|-------------|------|-----------|----------|-----------|----------|----------|----------|-----------|----------|----------|-----------|----------|----------|----------|--|
| (pF) | Code | | 1H (50V) | 2A (100V) | 1H (50V) | 1V (35V) | 1E (25V) | 2A (100V) | 1C (16V) | 1A (10V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) | |
| 100 | 101 | J: ±5% | ■ | | | | | | | | | | | | |
| 1,000 | 102 | K: ±10% | | ■ | ■ | | | | | | | | | | |
| 1,500 | 152 | M: ±20% | | | | | | | | | | | | | |
| 2,200 | 222 | | | ■ | ■ | | | | | | | | | | |
| 3,300 | 332 | | | | | | | | | | | | | | |
| 4,700 | 472 | | | ■ | ■ | | | | | | | | | | |
| 6,800 | 682 | | | | | | | | | | | | | | |
| 10,000 | 103 | | | ■ | ■ | | | | | | | | | | |
| 15,000 | 153 | | | | | | | | | | | | | | |
| 22,000 | 223 | | | ■ | ■ | | | | | | | | | | |
| 33,000 | 333 | | | | | | | | | | | | | | |
| 47,000 | 473 | | | | ■ | | | ■ | | | | | | | |
| 68,000 | 683 | | | | | | | | | | | | | | |
| 100,000 | 104 | | | | ■ | | | ■ | | | | | | | |
| 150,000 | 154 | | | | | | | | | | | | | | |
| 220,000 | 224 | | | | ■ | ■ | | | | | | | | | |
| 330,000 | 334 | | | | | | | | | | | | | | |
| 470,000 | 474 | | | | ■ | ■ | ■ | | | | | | | | |
| 1,000,000 | 105 | | | | | | | | | | | | | | |
| 2,200,000 | 225 | | | | | | | ■ | ■ | | | | | | |

Standard Thickness 0.80 mm

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MULTILAYER CERAMIC CHIP CAPACITORS TDK

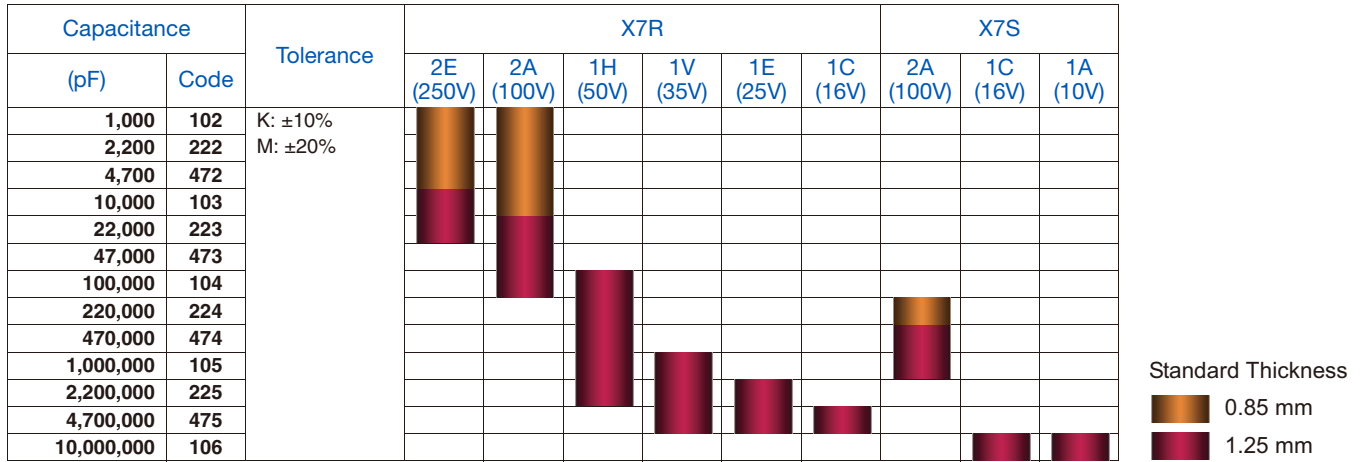
Capacitance Range Chart

CGA4(2012) [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics : X7R (±15%), X7S (±22%)

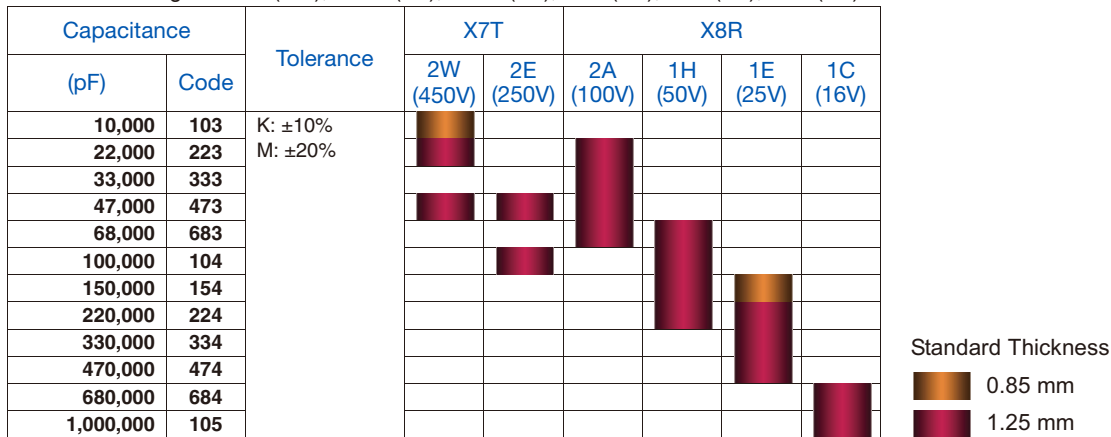
Rated Voltage : 250V (2E), 100V (2A), 50V (1H), 35V (1V), 25V (1E), 16V (1C), 10V (1A)



Capacitance Range Chart

Temperature Characteristics : X7T (+22/-33%), X8R (±15%)

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



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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance Range Chart

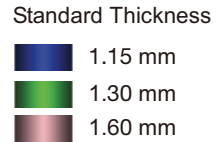
CGA5(3216) [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics : X7R (±15%), X7S (±22%)

Rated Voltage : 630V (2J), 250V (2E), 100V (2A), 50V (1H), 35V (1V), 25V (1E), 6.3V (0J)

| Capacitance | | Tolerance | X7R | | | | | | | X7S |
|-------------|------|--------------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|--------------|
| (pF) | Code | | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 1V (35V) | 1E (25V) | 0J (6.3V) | 2A (100V) |
| 1,000 | 102 | K: ±10% M: ±20% | █ | | | | | | | |
| 2,200 | 222 | | | | | | | | | |
| 3,300 | 332 | | | | | | | | | |
| 4,700 | 472 | | | | | | | | | |
| 10,000 | 103 | | | █ | | | | | | |
| 22,000 | 223 | | | █ | █ | | | | | |
| 33,000 | 333 | | | █ | | | | | | |
| 47,000 | 473 | | | | █ | | | | | |
| 100,000 | 104 | | | | | █ | | | | |
| 220,000 | 224 | | | | | | █ | | | |
| 470,000 | 474 | | | | | | | █ | | |
| 1,000,000 | 105 | | | | | | | | █ | |
| 2,200,000 | 225 | | | | | | | | | █ |
| 4,700,000 | 475 | | | | | | | | | |
| 10,000,000 | 106 | | | | | | | | | |
| 22,000,000 | 226 | M: ±20% | | | | | | | █ | |

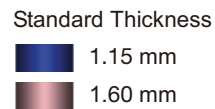


Capacitance Range Chart

Temperature Characteristics : X7T (+22/-33%), X8R (±15%)

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

| Capacitance | | Tolerance | X7T | | | X8R | | | |
|-------------|------|--------------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|
| (pF) | Code | | 2J (630V) | 2W (450V) | 2E (250V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 47,000 | 473 | K: ±10% M: ±20% | █ | | | | | | |
| 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 | | | | | | | | █ |



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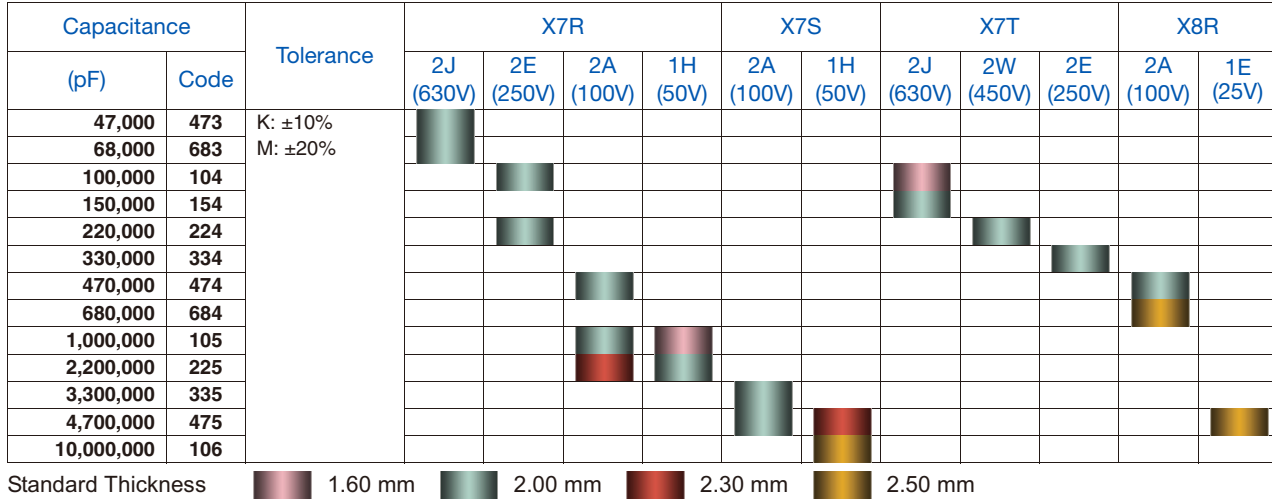
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Capacitance Range Chart

CGA6(3225) [EIA CC1210]

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)

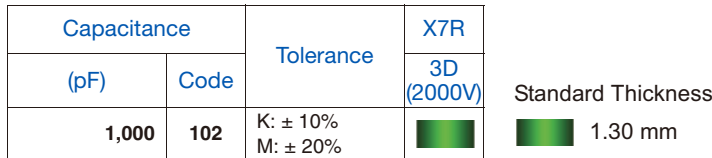


Capacitance Range Chart

CGA7(4520) [EIA CC1808]

Capacitance Range Chart

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

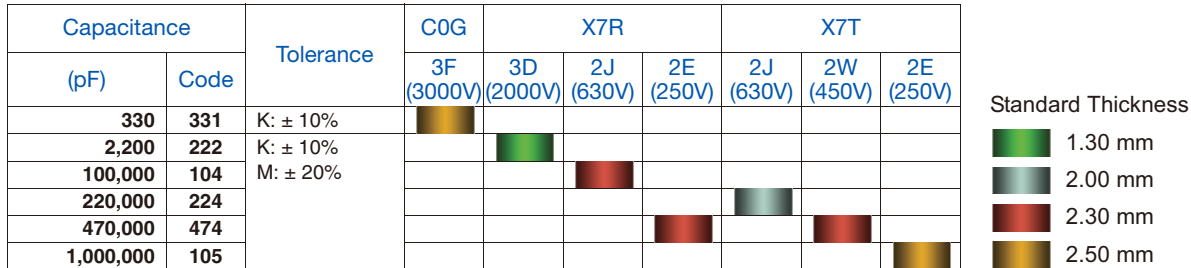


Capacitance Range Chart

CGA8(4532) [EIA CC1812]

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)



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Capacitance Range Chart

CGA9(5750) [EIA CC2220]


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

MULTILAYER CERAMIC CHIP CAPACITORS



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 : 3000V | Rated Voltage Edc : 50V |
| 100pF | 1005 | 0.50+0.10/-0.05 | ±5% | | CGA2B2C0G1H101J050BE |
| | 1608 | 0.80+0.15/-0.10 | ±5% | | CGA3E2C0G1H101J080AE |
| 330pF | 4532 | 2.50 ± 0.20 | ±10% | CGA8P1C0G3F331K250KE | |

Class 2 (Temperature Stable)

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

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | Catalog Number | | | |
|-------------|-----------|------------------|-----------------------|---------------------------|--------------------------|--------------------------|--------------------------|
| | | | | Rated Voltage Edc : 2000V | Rated Voltage Edc : 630V | Rated Voltage Edc : 250V | Rated Voltage Edc : 100V |
| 1nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B2X7R1H102K050BE |
| | | | ±20% | | | | CGA2B2X7R1H102M050BE |
| | 1608 | 0.80 +0.15/-0.10 | ±10% | | | CGA3E2X7R2A102K080AE | CGA3E2X7R1H102K080AE |
| | | | ±20% | | | CGA3E2X7R2A102M080AE | CGA3E2X7R1H102M080AE |
| | 2012 | 0.85±0.15 | ±10% | | CGA4F3X7R2E102K085AE | CGA4F2X7R2A102K085AE | |
| | | | ±20% | | CGA4F3X7R2E102M085AE | CGA4F2X7R2A102M085AE | |
| 3216 | 1.15±0.15 | ±10% | CGA5H4X7R2J102K115AE | | | | |
| | | ±20% | CGA5H4X7R2J102M115AE | | | | |
| 2.2nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B2X7R1H222K050BE |
| | | | ±20% | | | | CGA2B2X7R1H222M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E2X7R2A222K080AE | CGA3E2X7R1H222K080AE |
| | | | ±20% | | | CGA3E2X7R2A222M080AE | CGA3E2X7R1H222M080AE |
| | 2012 | 0.85±0.15 | ±10% | | CGA4F3X7R2E222K085AE | CGA4F2X7R2A222K085AE | |
| | | | ±20% | | CGA4F3X7R2E222M085AE | CGA4F2X7R2A222M085AE | |
| 3216 | 1.15±0.15 | ±10% | CGA5H4X7R2J222K115AE | | | | |
| | | ±20% | CGA5H4X7R2J222M115AE | | | | |
| 3.3nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X7R1H103K050BE |
| | | | ±20% | | | | CGA2B3X7R1H103M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E2X7R2A103K080AE | CGA3E2X7R1H103K080AE |
| | | | ±20% | | | CGA3E2X7R2A103M080AE | CGA3E2X7R1H103M080AE |
| | 2012 | 0.85±0.15 | ±10% | | CGA4J3X7R2E103K125AE | CGA4J2X7R2A103K125AE | |
| | | | ±20% | | CGA4J3X7R2E103M125AE | CGA4J2X7R2A103M125AE | |
| 3216 | 1.15±0.15 | ±10% | CGA5H4X7R2J103K115AE | | | | |
| | | ±20% | CGA5H4X7R2J103M115AE | | | | |
| 4.7nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X7R1H103K050BE |
| | | | ±20% | | | | CGA2B3X7R1H103M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E2X7R2A103K080AE | CGA3E2X7R1H103K080AE |
| | | | ±20% | | | CGA3E2X7R2A103M080AE | CGA3E2X7R1H103M080AE |
| | 2012 | 0.85±0.15 | ±10% | | CGA4J3X7R2E103K125AE | CGA4J2X7R2A103K125AE | |
| | | | ±20% | | CGA4J3X7R2E103M125AE | CGA4J2X7R2A103M125AE | |
| 3216 | 1.15±0.15 | ±10% | CGA5H4X7R2J103K115AE | | | | |
| | | ±20% | CGA5H4X7R2J103M115AE | | | | |
| 10nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X7R1H103K050BE |
| | | | ±20% | | | | CGA2B3X7R1H103M050BE |
| | 1608 | 0.80 +0.15/-0.10 | ±10% | | | CGA3E2X7R2A103K080AE | CGA3E2X7R1H103K080AE |
| | | | ±20% | | | CGA3E2X7R2A103M080AE | CGA3E2X7R1H103M080AE |
| | 2012 | 0.85±0.15 | ±10% | | CGA4J3X7R2E103K125AE | CGA4J2X7R2A103K125AE | |
| | | | ±20% | | CGA4J3X7R2E103M125AE | CGA4J2X7R2A103M125AE | |
| 3216 | 1.15±0.15 | ±10% | CGA5H4X7R2J103K115AE | | | | |
| | | ±20% | CGA5H4X7R2J103M115AE | | | | |
| 22nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X7R1H103K050BE |
| | | | ±20% | | | | CGA2B3X7R1H103M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E2X7R2A223K080AE | CGA3E2X7R1H223K080AE |
| | | | ±20% | | | CGA3E2X7R2A223M080AE | CGA3E2X7R1H223M080AE |
| | 2012 | 1.25 +0.25/-0.20 | ±10% | | CGA4J3X7R2E223K125AE | CGA4J2X7R2A223K125AE | |
| | | | ±20% | | CGA4J3X7R2E223M125AE | CGA4J2X7R2A223M125AE | |
| 3216 | 1.15±0.15 | ±10% | CGA5H3X7R2E223K115AE | | | | |
| | | ±20% | CGA5H3X7R2E223M115AE | | | | |
| 33nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X7R1H223K050BE |
| | | | ±20% | | | | CGA2B3X7R1H223M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E2X7R2A223K080AE | CGA3E2X7R1H223K080AE |
| | | | ±20% | | | CGA3E2X7R2A223M080AE | CGA3E2X7R1H223M080AE |
| | 2012 | 1.25 +0.25/-0.20 | ±10% | | CGA4J3X7R2E223K125AE | CGA4J2X7R2A223K125AE | |
| | | | ±20% | | CGA4J3X7R2E223M125AE | CGA4J2X7R2A223M125AE | |
| 3216 | 1.30±0.20 | ±10% | CGA5K4X7R2J223K130AE | | | | |
| | | ±20% | CGA5K4X7R2J223M130AE | | | | |
| 33nF | 3216 | 1.60+0.30/-0.20 | ±10% | CGA5L4X7R2J333K160AE | | | |
| | | | ±20% | CGA5L4X7R2J333M160AE | | | |

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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 : 630V | Rated Voltage Edc : 250V | Rated Voltage Edc : 100V | Rated Voltage Edc : 50V |
| 47nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X7R1H473K050BE |
| | | | ±20% | | | | CGA2B3X7R1H473M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | | | CGA3E2X7R1H473K080AE |
| | | | ±20% | | | | CGA3E2X7R1H473M080AE |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | | CGA4J2X7R2A473K125AE |
| | | | ±20% | | | | CGA4J2X7R2A473M125AE |
| 3216 | 1.60+0.30/-0.20 | ±10% | | CGA5L3X7R2E473K160AE | | | |
| | | ±20% | | CGA5L3X7R2E473M160AE | | | |
| 3225 | 2.00+0.30/-0.20 | ±10% | CGA6M4X7R2J473K200AE | | | | |
| | | ±20% | CGA6M4X7R2J473M200AE | | | | |
| 68nF | 3225 | 2.00+0.30/-0.20 | ±10% | CGA6M4X7R2J683K200AE | | | |
| | | | ±20% | CGA6M4X7R2J683M200AE | | | |
| 100nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X7R1H104K050BE |
| | | | ±20% | | | | CGA2B3X7R1H104M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | | | CGA3E2X7R1H104K080AE |
| | | | ±20% | | | | CGA3E2X7R1H104M080AE |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | | CGA4J2X7R1H104K125AE |
| | | | ±20% | | | | CGA4J2X7R1H104M125AE |
| 3216 | 1.60+0.30/-0.20 | ±10% | | CGA5L3X7R2E104K160AE | CGA5L2X7R2A104K160AE | | |
| | | ±20% | | CGA5L3X7R2E104M160AE | CGA5L2X7R2A104M160AE | | |
| 3225 | 2.00+0.30/-0.20 | ±10% | | CGA6M3X7R2E104K200AE | | | |
| | | ±20% | | CGA6M3X7R2E104M200AE | | | |
| 4532 | 2.30+0.30/-0.20 | ±10% | CGA8N4X7R2J104K230KE | | | | |
| | | ±20% | CGA8N4X7R2J104M230KE | | | | |
| 220nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | | CGA3E3X7R1H224K080AE |
| | | | ±20% | | | | CGA3E3X7R1H224M080AE |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | | CGA4J2X7R1H224K125AE |
| | | | ±20% | | | | CGA4J2X7R1H224M125AE |
| | 3216 | 1.15±0.15 | ±10% | | | | CGA5H2X7R2A224K115AE |
| | | | ±20% | | | | CGA5H2X7R2A224M115AE |
| 3225 | 2.00+0.30/-0.20 | ±10% | | CGA6M3X7R2E224K200AE | | | |
| | | ±20% | | CGA6M3X7R2E224M200AE | | | |
| 5750 | 2.30+0.30/-0.20 | ±10% | CGA9N4X7R2J224K230KE | | | | |
| | | ±20% | CGA9N4X7R2J224M230KE | | | | |
| 470nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | | CGA3E3X7R1H474K080AE |
| | | | ±20% | | | | CGA3E3X7R1H474M080AE |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | | CGA4J3X7R1H474K125AE |
| | | | ±20% | | | | CGA4J3X7R1H474M125AE |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | | CGA5L2X7R2A474K160AE |
| | | | ±20% | | | | CGA5L2X7R2A474M160AE |
| 3225 | 2.00+0.30/-0.20 | ±10% | | | | CGA6M2X7R2A474K200AE | |
| | | ±20% | | | | CGA6M2X7R2A474M200AE | |
| 4532 | 2.30+0.30/-0.20 | ±10% | | CGA8N3X7R2E474K230KE | | | |
| | | ±20% | | CGA8N3X7R2E474M230KE | | | |
| 1µF | 2012 | 1.25+0.25/-0.20 | ±10% | | | | CGA4J3X7R1H105K125AE |
| | | | ±20% | | | | CGA4J3X7R1H105M125AE |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | | CGA5L2X7R2A105K160AE |
| | | | ±20% | | | | CGA5L2X7R2A105M160AE |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | | CGA5L3X7R1H105K160AE |
| | | | ±20% | | | | CGA5L3X7R1H105M160AE |
| 3225 | 2.00+0.30/-0.20 | ±10% | | | | CGA6L2X7R1H105K160AE | |
| | | ±20% | | | | CGA6L2X7R1H105M160AE | |
| 5750 | 2.30+0.30/-0.20 | ±10% | | CGA9N3X7R2E105K230KE | | | |
| | | ±20% | | CGA9N3X7R2E105M230KE | | | |
| 2.2µF | 2012 | 1.25+0.25/-0.20 | ±10% | | | | CGA4J3X7R1H225K125AE |
| | | | ±20% | | | | CGA4J3X7R1H225M125AE |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | | CGA5L3X7R1H225K160AE |
| | | | ±20% | | | | CGA5L3X7R1H225M160AE |
| | 3225 | 2.00+0.30/-0.20 | ±10% | | | | CGA6M3X7R1H225K200AE |
| | | | ±20% | | | | CGA6M3X7R1H225M200AE |
| 3225 | 2.30+0.30/-0.20 | ±10% | | | | CGA6N3X7R2A225K230AE | |
| | | ±20% | | | | CGA6N3X7R2A225M230AE | |
| 4.7µF | 3216 | 1.60+0.30/-0.20 | ±10% | | | | CGA5L3X7R1H475K160AE |
| | | | ±20% | | | | CGA5L3X7R1H475M160AE |

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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 : 6.3V |
| 220nF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B1X7R1V224K050BE | CGA2B3X7R1E224K050BE | CGA2B2X7R1C224K050BE | |
| | | | ±20% | CGA2B1X7R1V224M050BE | CGA2B3X7R1E224M050BE | CGA2B2X7R1C224M050BE | |
| | | | ±10% | CGA3E3X7R1V224K080AE | | | |
| 470nF | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E3X7R1V224M080AE | | | |
| | | | ±20% | CGA3E1X7R1V474K080AE | CGA3E3X7R1E474K080AE | | |
| | | | ±20% | CGA3E1X7R1V474M080AE | CGA3E3X7R1E474M080AE | | |
| 1µF | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E1X7R1V105K080AE | CGA3E1X7R1E105K080AE | | |
| | | | ±20% | CGA3E1X7R1V105M080AE | CGA3E1X7R1E105M080AE | | |
| | | | ±10% | CGA4J3X7R1V105K125AE | | | |
| 2.2µF | 2012 | 1.25 +0.25/-0.20 | ±10% | CGA4J3X7R1V105M125AE | | | |
| | | | ±20% | CGA4J1X7R1V225K125AE | CGA4J3X7R1E225K125AE | | |
| | | | ±20% | CGA4J1X7R1V225M125AE | CGA4J3X7R1E225M125AE | | |
| 4.7µF | 3216 | 1.60+0.30/-0.20 | ±10% | CGA5L3X7R1V225K160AE | CGA5L2X7R1E225K160AE | | |
| | | | ±20% | CGA5L3X7R1V225M160AE | CGA5L2X7R1E225M160AE | | |
| | | | ±10% | CGA4J1X7R1V475K125AE | CGA4J1X7R1E475K125AE | CGA4J3X7R1C475K125AE | |
| 10µF | 3216 | 1.60 +0.30/-0.20 | ±10% | CGA4J1X7R1V475M125AE | CGA4J1X7R1E475M125AE | CGA4J3X7R1C475M125AE | |
| | | | ±20% | CGA5L1X7R1V475K160AE | | | |
| | | | ±20% | CGA5L1X7R1V475M160AE | | | |
| 22µF | 3216 | 1.60+0.30/-0.20 | ±20% | | | | CGA5L1X7R0J226M160AE |

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 | Rated Voltage Edc : 10V |
| 47nF | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E3X7S2A473K080AE | | | |
| | | | ±20% | CGA3E3X7S2A473M080AE | | | |
| 100nF | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E3X7S2A104K080AE | | | |
| | | | ±20% | CGA3E3X7S2A104M080AE | | | |
| 220nF | 2012 | 0.85±0.15 | ±10% | CGA4F3X7S2A224K085AE | | | |
| | | | ±20% | CGA4F3X7S2A224M085AE | | | |
| 470nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | CGA2B1X7S1C474K050BE | CGA2B3X7S1A474K050BE |
| | | | ±20% | | | CGA2B1X7S1C474M050BE | CGA2B3X7S1A474M050BE |
| | | | ±10% | CGA4J3X7S2A474K125AE | | | |
| 1µF | 2012 | 1.25 +0.25/-0.20 | ±10% | CGA4J3X7S2A474M125AE | | | |
| | | | ±20% | CGA4J3X7S2A105K125AE | | | |
| 2.2µF | 3216 | 1.60 +0.30/-0.20 | ±10% | CGA4J3X7S2A105M125AE | | | |
| | | | ±20% | CGA5L3X7S2A225K160AE | | | |
| | | | ±20% | CGA5L3X7S2A225M160AE | | | |
| 3.3µF | 3225 | 2.00+0.30/-0.20 | ±10% | CGA6M3X7S2A335K200AE | | | |
| | | | ±20% | CGA6M3X7S2A335M200AE | | | |
| 4.7µF | 3225 | 2.00 +0.30/-0.20 | ±10% | CGA6M3X7S2A475K200AE | | | |
| | | | ±20% | CGA6M3X7S2A475M200AE | | | |
| | | | ±10% | | CGA6N3X7S1H475K230AE | | |
| 10µF | 2012 | 1.25+0.25/-0.20 | ±10% | | CGA6N3X7S1H475M230AE | | |
| | | | ±20% | | CGA4J1X7S1C106K125AE | CGA4J3X7S1A106K125AE | |
| | | | ±20% | | CGA4J1X7S1C106M125AE | CGA4J3X7S1A106M125AE | |
| 3225 | 2.50±0.30 | ±10% | | CGA6P3X7S1H106K250AE | | | |
| | | | ±20% | | CGA6P3X7S1H106M250AE | | |
| | | | ±10% | CGA9N3X7S2A106K230KE | | | |
| 5750 | 2.30 +0.30/-0.20 | ±20% | CGA9N3X7S2A106M230KE | | | | |

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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% | CGA4F4X7T2W103K085AE | | |
| | | | ± 20% | CGA4F4X7T2W103M085AE | | |
| 22 nF | 2012 | 1.25 +0.25/-0.20 | ± 10% | CGA4J4X7T2W223K125AE | | |
| | | | ± 20% | CGA4J4X7T2W223M125AE | | |
| 47 nF | 2012 | 1.25 +0.25/-0.20 | ± 10% | CGA4J4X7T2W473K125AE | CGA4J3X7T2E473K125AE | |
| | | | ± 20% | CGA4J4X7T2W473M125AE | CGA4J3X7T2E473M125AE | |
| | 3216 | 1.60 +0.30/-0.20 | ± 10% | CGA5L1X7T2J473K160AE | | |
| | | | ± 20% | CGA5L1X7T2J473M160AE | | |
| 2012 | 1.25 +0.25/-0.20 | ± 10% | CGA4J3X7T2E104K125AE | | | |
| | | ± 20% | CGA4J3X7T2E104M125AE | | | |
| 100 nF | 3216 | 1.60 +0.30/-0.20 | ± 10% | CGA5L4X7T2W104K160AE | | |
| | | | ± 20% | CGA5L4X7T2W104M160AE | | |
| 3225 | 1.60 +0.30/-0.20 | | ± 10% | CGA6L1X7T2J104K160AE | | |
| | | | ± 20% | CGA6L1X7T2J104M160AE | | |
| 150nF | 3225 | 2.00+0.30/-0.20 | ±10% | CGA6M1X7T2J154K200AE | | |
| | | | ±20% | CGA6M1X7T2J154M200AE | | |
| 3216 | 1.60 +0.30/-0.20 | | ± 10% | CGA5L3X7T2E224K160AE | | |
| | | | ± 20% | CGA5L3X7T2E224M160AE | | |
| 220 nF | 3225 | 2.00 +0.30/-0.20 | ± 10% | CGA6M4X7T2W224K200AE | | |
| | | | ± 20% | CGA6M4X7T2W224M200AE | | |
| 4532 | 2.00 +0.30/-0.20 | | ± 10% | CGA8M1X7T2J224K200KE | | |
| | | | ± 20% | CGA8M1X7T2J224M200KE | | |
| 330nF | 3225 | 2.00+0.30/-0.20 | ±10% | CGA6M3X7T2E334K200AE | | |
| | | | ±20% | CGA6M3X7T2E334M200AE | | |
| 4532 | 2.30 +0.30/-0.20 | | ± 10% | CGA8N4X7T2W474K230KE | | |
| | | | ± 20% | CGA8N4X7T2W474M230KE | | |
| 470 nF | 5750 | 2.50 ± 0.30 | ± 10% | CGA9P1X7T2J474K250KE | | |
| | | | ± 20% | CGA9P1X7T2J474M250KE | | |
| 4532 | 2.50 ± 0.30 | | ± 10% | CGA8P3X7T2E105K250KE | | |
| | | | ± 20% | CGA8P3X7T2E105M250KE | | |
| 1 μF | 5750 | 2.50 ± 0.30 | ± 10% | CGA9P4X7T2W105K250KE | | |
| | | | ± 20% | CGA9P4X7T2W105M250KE | | |
| 2.2 uF | 5750 | 2.50 ± 0.30 | ± 10% | CGA9P3X7T2E225K250KE | | |
| | | | ± 20% | CGA9P3X7T2E225M250KE | | |

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 |
| 150pF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A151K050BE | CGA2B2X8R1H151K050BE | | |
| | | | ±20% | CGA2B2X8R2A151M050BE | CGA2B2X8R1H151M050BE | | |
| 220pF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A221K050BE | CGA2B2X8R1H221K050BE | | |
| | | | ±20% | CGA2B2X8R2A221M050BE | CGA2B2X8R1H221M050BE | | |
| 330pF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A331K050BE | CGA2B2X8R1H331K050BE | | |
| | | | ±20% | CGA2B2X8R2A331M050BE | CGA2B2X8R1H331M050BE | | |
| 470pF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A471K050BE | CGA2B2X8R1H471K050BE | | |
| | | | ±20% | CGA2B2X8R2A471M050BE | CGA2B2X8R1H471M050BE | | |
| 680pF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A681K050BE | CGA2B2X8R1H681K050BE | | |
| | | | ±20% | CGA2B2X8R2A681M050BE | CGA2B2X8R1H681M050BE | | |
| 1nF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A102K050BE | CGA2B2X8R1H102K050BE | | |
| | | | ±20% | CGA2B2X8R2A102M050BE | CGA2B2X8R1H102M050BE | | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A102K080AE | CGA3E2X8R1H102K080AE | | |
| | | | ±20% | CGA3E2X8R2A102M080AE | CGA3E2X8R1H102M080AE | | |
| 1.5nF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A152K050BE | CGA2B2X8R1H152K050BE | | |
| | | | ±20% | CGA2B2X8R2A152M050BE | CGA2B2X8R1H152M050BE | | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A152K080AE | CGA3E2X8R1H152K080AE | | |
| | | | ±20% | CGA3E2X8R2A152M080AE | CGA3E2X8R1H152M080AE | | |
| 2.2nF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B2X8R2A222K050BE | CGA2B2X8R1H222K050BE | | |
| | | | ±20% | CGA2B2X8R2A222M050BE | CGA2B2X8R1H222M050BE | | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A222K080AE | CGA3E2X8R1H222K080AE | | |
| | | | ±20% | CGA3E2X8R2A222M080AE | CGA3E2X8R1H222M080AE | | |
| 3.3nF | 1005 | 0.50+0.10/-0.05 | ±10% | CGA2B3X8R2A332K050BE | CGA2B2X8R1H332K050BE | | |
| | | | ±20% | CGA2B3X8R2A332M050BE | CGA2B2X8R1H332M050BE | | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A332K080AE | CGA3E2X8R1H332K080AE | | |
| | | | ±20% | CGA3E2X8R2A332M080AE | CGA3E2X8R1H332M080AE | | |
| 4.7nF | 1005 | 0.50+0.10/-0.05 | ±10% | | CGA2B2X8R1H472K050BE | | |
| | | | ±20% | | CGA2B2X8R1H472M050BE | | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A472K080AE | CGA3E2X8R1H472K080AE | | |
| | | | ±20% | CGA3E2X8R2A472M080AE | CGA3E2X8R1H472M080AE | | |
| 6.8nF | 1005 | 0.50+0.10/-0.05 | ±10% | | CGA2B3X8R1H682K050BE | CGA2B2X8R1E682K050BE | |
| | | | ±20% | | CGA2B3X8R1H682M050BE | CGA2B2X8R1E682M050BE | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A682K080AE | CGA3E2X8R1H682K080AE | | |
| | | | ±20% | CGA3E2X8R2A682M080AE | CGA3E2X8R1H682M080AE | | |
| 10nF | 1005 | 0.50+0.10/-0.05 | ±10% | | CGA2B3X8R1H103K050BE | CGA2B2X8R1E103K050BE | |
| | | | ±20% | | CGA2B3X8R1H103M050BE | CGA2B2X8R1E103M050BE | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A103K080AE | CGA3E2X8R1H103K080AE | | |
| | | | ±20% | CGA3E2X8R2A103M080AE | CGA3E2X8R1H103M080AE | | |
| 15nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | CGA2B3X8R1E153K050BE | |
| | | | ±20% | | | CGA2B3X8R1E153M050BE | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E2X8R2A153K080AE | CGA3E2X8R1H153K080AE | | |
| | | | ±20% | CGA3E2X8R2A153M080AE | CGA3E2X8R1H153M080AE | | |
| 22nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | CGA2B3X8R1E223K050BE | |
| | | | ±20% | | | CGA2B3X8R1E223M050BE | |
| | 1608 | 0.80+0.15/-0.10 | ±10% | CGA3E3X8R2A223K080AE | CGA3E2X8R1H223K080AE | | |
| | | | ±20% | CGA3E3X8R2A223M080AE | CGA3E2X8R1H223M080AE | | |
| 2012 | 1.25+0.25/-0.20 | ±10% | CGA4J2X8R2A223K125AE | | | | |
| | | ±20% | CGA4J2X8R2A223M125AE | | | | |
| 33nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X8R1C333K050BE |
| | | | ±20% | | | | CGA2B3X8R1C333M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | CGA3E2X8R1H333K080AE | | |
| | | | ±20% | | CGA3E2X8R1H333M080AE | | |
| 2012 | 1.25+0.25/-0.20 | ±10% | CGA4J3X8R2A333K125AE | | | | |
| | | ±20% | CGA4J3X8R2A333M125AE | | | | |
| 47nF | 1005 | 0.50+0.10/-0.05 | ±10% | | | | CGA2B3X8R1C473K050BE |
| | | | ±20% | | | | CGA2B3X8R1C473M050BE |
| | 1608 | 0.80+0.15/-0.10 | ±10% | | CGA3E2X8R1H473K080AE | | |
| | | | ±20% | | CGA3E2X8R1H473M080AE | | |
| 2012 | 1.25+0.25/-0.20 | ±10% | CGA4J3X8R2A473K125AE | | | | |
| | | ±20% | CGA4J3X8R2A473M125AE | | | | |
| 68nF | 1608 | 0.80+0.15/-0.10 | ±10% | | CGA3E3X8R1H683K080AE | CGA3E2X8R1E683K080AE | |
| | | | ±20% | | CGA3E3X8R1H683M080AE | CGA3E2X8R1E683M080AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | CGA4J3X8R2A683K125AE | CGA4J2X8R1H683K125AE | | |
| | | | ±20% | CGA4J3X8R2A683M125AE | CGA4J2X8R1H683M125AE | | |
| 1608 | 0.80+0.15/-0.10 | ±10% | | CGA3E3X8R1H104K080AE | CGA3E2X8R1E104K080AE | | |
| | | ±20% | | CGA3E3X8R1H104M080AE | CGA3E2X8R1E104M080AE | | |
| 100nF | 2012 | 1.25+0.25/-0.20 | ±10% | | CGA4J2X8R1H104K125AE | | |
| | | | ±20% | | CGA4J2X8R1H104M125AE | | |
| | 3216 | 1.15±0.15 | ±10% | CGA5H2X8R2A104K115AE | | | |
| | | | ±20% | CGA5H2X8R2A104M115AE | | | |

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.
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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 |
| 150nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E3X8R1E154K080AE | |
| | | | ±20% | | | CGA3E3X8R1E154M080AE | |
| | 2012 | 0.85±0.15 | ±10% | | | CGA4F2X8R1E154K085AE | |
| | | | ±20% | | | CGA4F2X8R1E154M085AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | CGA5L2X8R2A154K160AE | CGA4J3X8R1H154K125AE | | |
| | | | ±20% | CGA5L2X8R2A154M160AE | CGA4J3X8R1H154M125AE | | |
| 220nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E3X8R1E224K080AE | |
| | | | ±20% | | | CGA3E3X8R1E224M080AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | CGA4J3X8R1H224K125AE | CGA4J2X8R1E224K125AE | |
| | | | ±20% | | CGA4J3X8R1H224M125AE | CGA4J2X8R1E224M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | CGA5L3X8R2A224K160AE | | | |
| | | | ±20% | CGA5L3X8R2A224M160AE | | | |
| 330nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E3X8R1C334K080AE | |
| | | | ±20% | | | CGA3E3X8R1C334M080AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | CGA4J2X8R1E334K125AE | |
| | | | ±20% | | | CGA4J2X8R1E334M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | CGA5L3X8R2A334K160AE | CGA5L2X8R1H334K160AE | | |
| | | | ±20% | CGA5L3X8R2A334M160AE | CGA5L2X8R1H334M160AE | | |
| 470nF | 1608 | 0.80+0.15/-0.10 | ±10% | | | CGA3E3X8R1C474K080AE | |
| | | | ±20% | | | CGA3E3X8R1C474M080AE | |
| | 2012 | 1.25+0.25/-0.20 | ±10% | | | CGA4J3X8R1E474K125AE | |
| | | | ±20% | | | CGA4J3X8R1E474M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | CGA5L2X8R1H474K160AE | | |
| | | | ±20% | | CGA5L2X8R1H474M160AE | | |
| 3225 | 2.00+0.30/-0.20 | ±10% | CGA6M3X8R2A474K200AE | | | | |
| | | ±20% | CGA6M3X8R2A474M200AE | | | | |
| 680nF | 2012 | 1.25+0.25/-0.20 | ±10% | | | CGA4J3X8R1C684K125AE | |
| | | | ±20% | | | CGA4J3X8R1C684M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | CGA5L3X8R1H684K160AE | | |
| | | | ±20% | | CGA5L3X8R1H684M160AE | | |
| | 3225 | 2.50±0.30 | ±10% | CGA6P3X8R2A684K250AE | | | |
| | | | ±20% | CGA6P3X8R2A684M250AE | | | |
| 1µF | 2012 | 1.25+0.25/-0.20 | ±10% | | | CGA4J3X8R1C105K125AE | |
| | | | ±20% | | | CGA4J3X8R1C105M125AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | CGA5L3X8R1H105K160AE | CGA5L2X8R1E105K160AE | |
| | | | ±20% | | CGA5L3X8R1H105M160AE | CGA5L2X8R1E105M160AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | CGA5L3X8R1E155K160AE | |
| | | | ±20% | | | CGA5L3X8R1E155M160AE | |
| 3216 | 1.60+0.30/-0.20 | ±10% | | | CGA5L3X8R1E225K160AE | | |
| | | ±20% | | | CGA5L3X8R1E225M160AE | | |
| 3.3µF | 3216 | 1.60+0.30/-0.20 | ±10% | | | CGA5L3X8R1C335K160AE | |
| | | | ±20% | | | CGA5L3X8R1C335M160AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | CGA5L3X8R1C475K160AE | |
| | | | ±20% | | | CGA5L3X8R1C475M160AE | |
| | 3216 | 1.60+0.30/-0.20 | ±10% | | | CGA6P3X8R1E475K250AE | |
| | | | ±20% | | | CGA6P3X8R1E475M250AE | |

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