



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



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(Example)

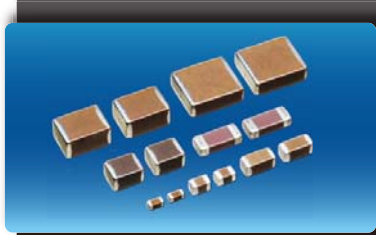
| Catalog Issued date | Catalog Number | Item Description (On Delivery Label) |
|------------------------|---------------------|--------------------------------------|
| Prior to January 2013 | C1608C0G1E103J | C1608C0G1E103JT000N |
| January 2013 and Later | C1608C0G1E103J080AA | C1608C0G1E103JT000N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



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



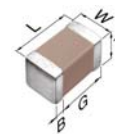
- Voltage rating of 100V to 630V with capacitance range up to 15 μ F.
- High capacitance has been achieved through precision technologies that enable the use of multiple thinner ceramic dielectric layers.
- Low residual inductance assures superior frequency characteristics.
- Excellent DC Bias properties.
- 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 μ 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: $\pm 5\%$ K: $\pm 10\%$ 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



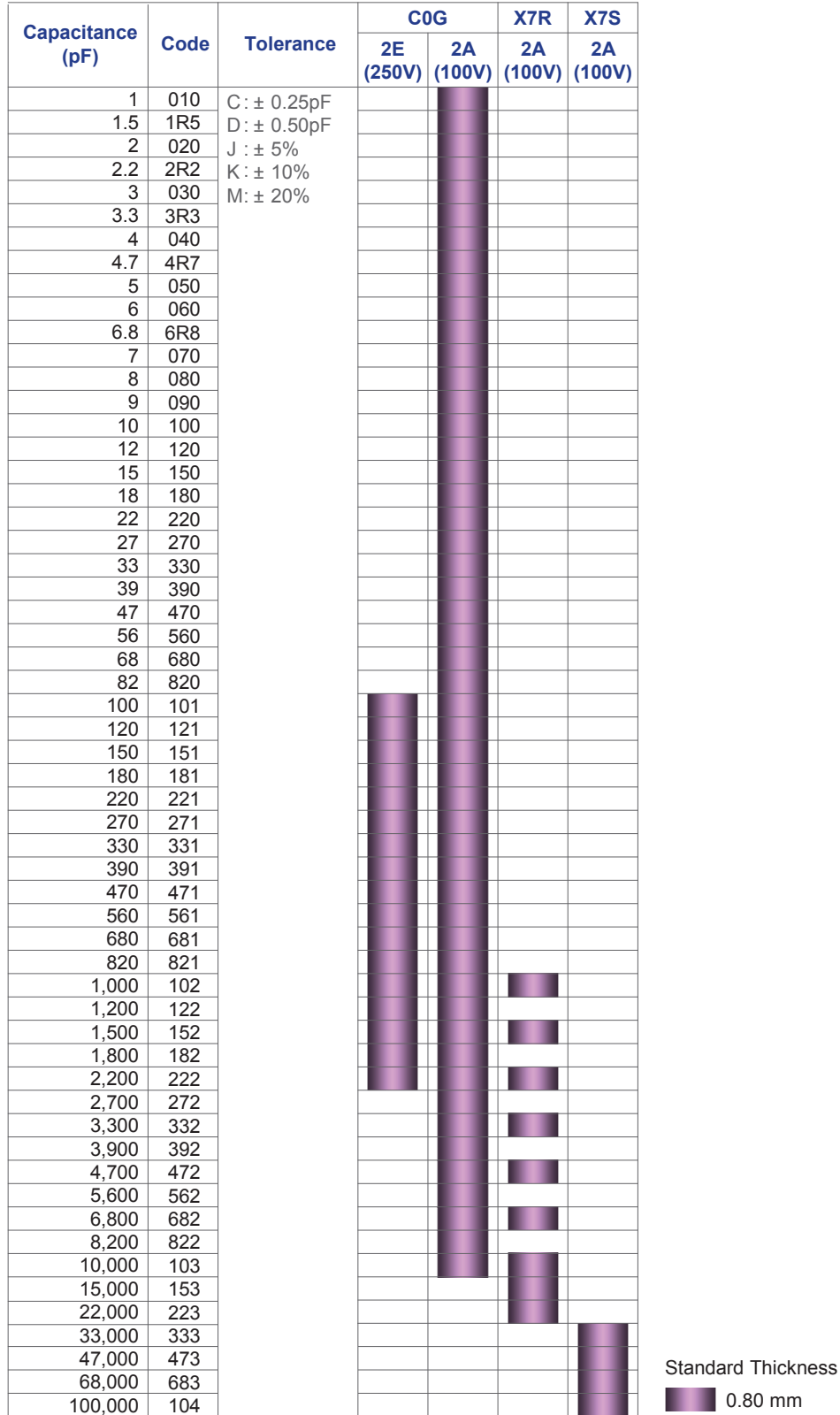
Capacitance Range Chart

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

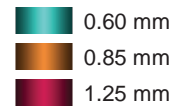
CGA4(2012) [EIA CC0805]

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





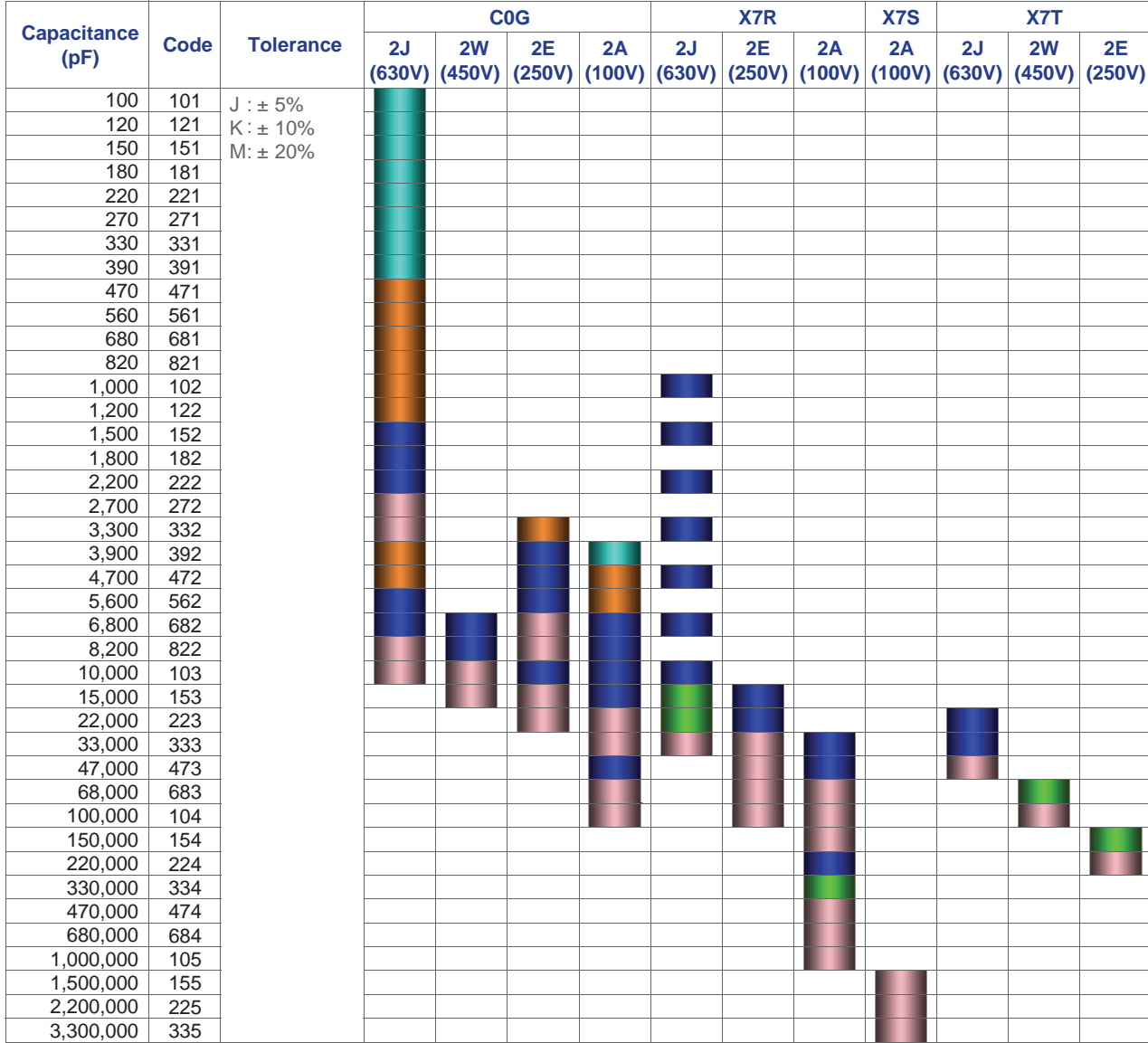
Capacitance Range Chart

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

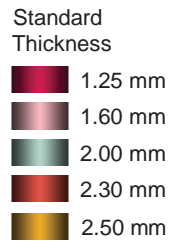
CGA6(3225) [EIA CC1210]

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 | | | | | | | | | | | | █ |





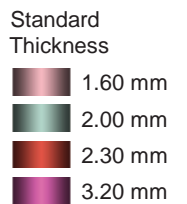
Capacitance Range Chart

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 | | | | | | | | | | | | |



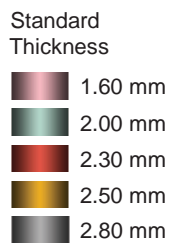
Capacitance Range Chart

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 | | | | | | | | | | | | |





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% | | | | 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 ± 0.20 | ± 5% | | CGA5L4C0G2W153J160AA | | |
| | | 1.60 + 0.3/-0.1 | ± 5% | | | | |
| | 3225 | 1.25 ± 0.20 | ± 5% | | | | CGA6J2C0G2A153J125AA |
| 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 ± 0.20 | ± 5% | | | CGA5L3C0G2E223J160AA | |
| | | 1.60 + 0.3/-0.1 | ± 5% | | | CGA6L3C0G2E223J160AA | CGA6L2C0G2A223J160AA |
| | 3225 | 1.60 ± 0.20 | ± 5% | CGA6N4C0G2J223J230AA | CGA6N4C0G2W223J230AA | | |
| 2.30 ± 0.20 | | ± 5% | | | CGA8L3C0G2E223J160KA | | |
| 4532 | 1.60 ± 0.20 | ± 5% | CGA8R4C0G2J223J320KA | | | | |
| 33 nF | 2012 | 1.25 ± 0.20 | ± 5% | | | | CGA4J1C0G2A333J125AC |
| | 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 | 1.15 ± 0.15 | ± 10% | CGA5H3X7R2E223K115AA | | | |
| | | | ± 20% | CGA5H3X7R2E223M115AA | | | |
| | 1608 | 0.80 ± 0.10 | ± 10% | CGA5K4X7R2J223K130AA | | | |
| | | | ± 20% | CGA5K4X7R2J223M130AA | | | |
| 33 nF | 2012 | 1.25 ± 0.20 | ± 10% | | | | CGA4J2X7R2A333K125AA |
| | | | ± 20% | | | | CGA4J2X7R2A333M125AA |
| | 3216 | 1.15 ± 0.15 | ± 10% | | | | CGA5H2X7R2A333K115AA |
| | | | ± 20% | | | | CGA5H2X7R2A333M115AA |
| 3216 | 1.60 ± 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 | |