



MULTILAYER CERAMIC CHIP CAPACITORS

C Series Commercial Grade High Temperature Application

Type:

C1005 [EIA CC0402]
C1608 [EIA CC0603]
C2012 [EIA CC0805]
C3216 [EIA CC1206]
C3225 [EIA CC1210]
C4532 [EIA CC1812]
C5750 [EIA CC2220]

Issue date:
Jun 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 |



C Series High Temperature Application

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



Features



- With a maximum temperature of 150°C and a capacitance change within ±15%, the series is suited for devices that operate in high-temperature environments.
- Excellent DC bias properties.

| Parameters | Specifications |
|-----------------------|---|
| Temperature | -55 to 150°C |
| Characteristics | ΔC/C: ±15% or 0 ± 30ppm |
| Operating Temperature | -55 to +150°C |
| Dissipation Factor | 5% maximum |
| Insulation Resistance | 10 GΩ or 500 MΩ • μF minimum |
| Voltage Proof | 2.5 • Rated Voltage or 3 • Rated Voltage for 1 to 5 seconds Charge/Discharge ≤ 50 mA |

Applications



- Automotive applications (engine rooms)
- Measurement instruments used at high temperature environments
- LCD display
- Sensor Module
- Smoothing and decoupling applications for other devices that operate at high temperature

Shape & Dimensions



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



Catalog Number Construction

C • 3225 • X8R • 1C • 106 • K • 250 • A • B

Series Name

Dimensions L x W (mm)

| Code | Length | Width | Terminal |
|-------|-------------|-------------|-----------|
| C1005 | 1.00 ± 0.05 | 0.50 ± 0.05 | 0.10 min. |
| C1608 | 1.60 ± 0.10 | 0.80 ± 0.10 | 0.20 min. |
| C2012 | 2.00 ± 0.20 | 1.25 ± 0.20 | 0.20 min. |
| C3216 | 3.20 ± 0.20 | 1.60 ± 0.20 | 0.20 min. |
| C3225 | 3.20 ± 0.40 | 2.50 ± 0.30 | 0.20 min. |
| C4532 | 4.50 ± 0.40 | 3.20 ± 0.40 | 0.20 min. |
| C5750 | 5.70 ± 0.40 | 5.00 ± 0.40 | 0.20 min. |

*Dimensional tolerances are typical values.

Temperature Characteristics

| Temperature Characteristics | Temperature Coefficient or Capacitance Change | Temperature Range |
|-----------------------------|---|-------------------|
| NP0 | 0 ± 30ppm/°C | -55 to +150°C |
| X8R | ±15% | -55 to +150°C |

Rated Voltage (DC)

| Code | Voltage (DC) | Code | Voltage (DC) |
|------|--------------|------|--------------|
| 1C | 16V | 2A | 100V |
| 1E | 25V | 2E | 250V |
| 1H | 50V | 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

Capacitance Tolerance

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

Nominal Thickness

| Code | Thickness | Code | Thickness |
|------|-----------|------|-----------|
| 050 | 0.50 mm | 230 | 2.30 mm |
| 060 | 0.60 mm | 250 | 2.50 mm |
| 080 | 0.80 mm | 280 | 2.80 mm |
| 085 | 0.85 mm | 320 | 3.20 mm |
| 115 | 1.15 mm | | |
| 125 | 1.25 mm | | |
| 160 | 1.60 mm | | |
| 200 | 2.00 mm | | |

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 | TDK Internal Code |



Capacitance Range Chart

EIA CC0402 [C1005]

Capacitance Range Chart

Temperature Characteristics: NP0 ($0 \pm 30\text{ppm}/^\circ\text{C}$), X8R ($\pm 15\%$)
 Rated Voltage: 100V (2A), 50V (1H), 25V (1E), 16V (1C)

| Capacitance (pF) | Code | Tolerance | NP0 | | X8R | | | |
|------------------|------|------------------------|-----------|----------|-----------|----------|----------|----------|
| | | | 2A (100V) | 1H (50V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 1 | 010 | C: $\pm 0.25\text{pF}$ | | | | | | |
| 1.5 | 1R5 | D: $\pm 0.50\text{pF}$ | | | | | | |
| 2 | 020 | J: $\pm 5\%$ | | | | | | |
| 2.2 | 2R2 | K: $\pm 10\%$ | | | | | | |
| 3 | 030 | M: $\pm 20\%$ | | | | | | |
| 3.3 | 3R3 | | | | | | | |
| 4 | 040 | | | | | | | |
| 4.7 | 4R7 | | | | | | | |
| 5 | 050 | | | | | | | |
| 6 | 060 | | | | | | | |
| 6.8 | 6R8 | | | | | | | |
| 7 | 070 | | | | | | | |
| 8 | 080 | | | | | | | |
| 9 | 090 | | | | | | | |
| 10 | 100 | | | | | | | |
| 12 | 120 | | | | | | | |
| 15 | 150 | | | | | | | |
| 18 | 180 | | | | | | | |
| 22 | 220 | | | | | | | |
| 27 | 270 | | | | | | | |
| 33 | 330 | | | | | | | |
| 39 | 390 | | | | | | | |
| 47 | 470 | | | | | | | |
| 56 | 560 | | | | | | | |
| 68 | 680 | | | | | | | |
| 82 | 820 | | | | | | | |
| 100 | 101 | | | | | | | |
| 120 | 121 | | | | | | | |
| 150 | 151 | | | | | | | |
| 180 | 181 | | | | | | | |
| 220 | 221 | | | | | | | |
| 270 | 271 | | | | | | | |
| 330 | 331 | | | | | | | |
| 390 | 391 | | | | | | | |
| 470 | 471 | | | | | | | |
| 560 | 561 | | | | | | | |
| 680 | 681 | | | | | | | |
| 820 | 821 | | | | | | | |
| 1,000 | 102 | | | | | | | |
| 1,500 | 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 | | | | | | | |

Standard Thickness
 0.50 mm



Capacitance Range Chart

EIA CC0603 [C1608]

Capacitance Range Chart

Temperature Characteristics: NPO ($0 \pm 30\text{ppm}/^\circ\text{C}$), X8R ($\pm 15\%$)
 Rated Voltage: 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

| Capacitance (pF) | Code | Tolerance | NPO | | |
|------------------|------|--|-----------|-----------|----------|
| | | | 2E (250V) | 2A (100V) | 1H (50V) |
| 1 | 010 | C: $\pm 0.25\text{pF}$ D: $\pm 0.50\text{pF}$ J: $\pm 5\%$ | | | |
| 2 | 1R5 | | | | |
| 2 | 020 | | | | |
| 2 | 2R2 | | | | |
| 3 | 030 | | | | |
| 3 | 3R3 | | | | |
| 4 | 040 | | | | |
| 5 | 4R7 | | | | |
| 5 | 050 | | | | |
| 6 | 060 | | | | |
| 7 | 6R8 | | | | |
| 7 | 070 | | | | |
| 8 | 080 | | | | |
| 9 | 090 | | | | |
| 10 | 100 | | | | |
| 12 | 120 | | | | |
| 15 | 150 | | | | |
| 18 | 180 | | | | |
| 22 | 220 | | | | |
| 27 | 270 | | | | |
| 33 | 330 | | | | |
| 39 | 390 | | | | |
| 47 | 470 | | | | |
| 56 | 560 | | | | |
| 68 | 680 | | | | |
| 82 | 820 | | | | |
| 100 | 101 | | | | |
| 120 | 121 | | | | |
| 150 | 151 | | | | |
| 180 | 181 | | | | |
| 220 | 221 | | | | |
| 270 | 271 | | | | |
| 330 | 331 | | | | |
| 390 | 391 | | | | |
| 470 | 471 | | | | |
| 560 | 561 | | | | |
| 680 | 681 | | | | |
| 820 | 821 | | | | |
| 1,000 | 102 | | | | |
| 1,200 | 122 | | | | |
| 1,500 | 152 | | | | |
| 1,800 | 182 | | | | |
| 2,200 | 222 | | | | |
| 2,700 | 272 | | | | |
| 3,300 | 332 | | | | |
| 3,900 | 392 | | | | |
| 4,700 | 472 | | | | |
| 5,600 | 562 | | | | |
| 6,800 | 682 | | | | |
| 8,200 | 822 | | | | |
| 10,000 | 103 | | | | |

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

Standard Thickness
 0.80 mm



Capacitance Range Chart

EIA CC0805 [C2012]

Capacitance Range Chart

Temperature Characteristics: NP0 (0 ± 30ppm/°C), X8R (±15%)

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

| Capacitance (pF) | Code | Tolerance | NP0 | | | | X8R | | | |
|------------------|------|-----------|-----------|-----------|-----------|----------|-----------|----------|----------|----------|
| | | | 2W (450V) | 2E (250V) | 2A (100V) | 1H (50V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 100 | 101 | J: ± 5% | █ | | | | | | | |
| 120 | 121 | K: ± 10% | █ | | | | | | | |
| 150 | 151 | M: ± 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 | | | | | | | | █ | █ |
| 150,000 | 154 | | | | | | | | | █ |
| 220,000 | 224 | | | | | | | | | █ |
| 330,000 | 334 | | | | | | | | | █ |
| 470,000 | 474 | | | | | | | | | █ |
| 680,000 | 684 | | | | | | | | | █ |
| 1,000,000 | 105 | | | | | | | | | █ |

Standard Thickness

- █ 0.60 mm
- █ 0.85 mm
- █ 1.25 mm

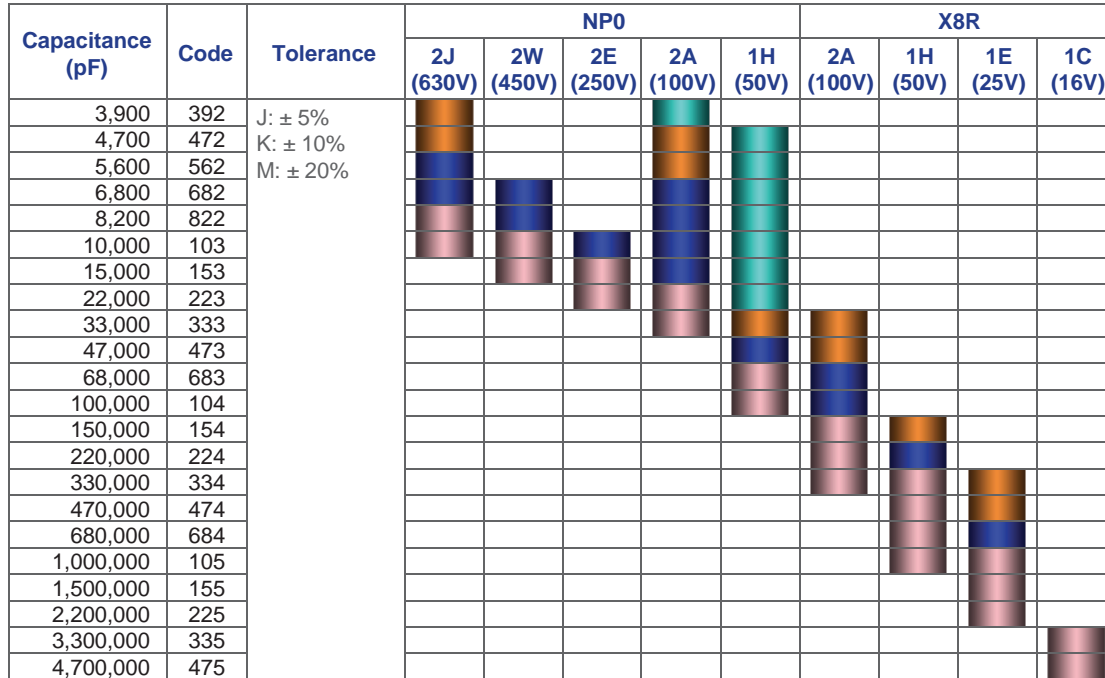


Capacitance Range Chart

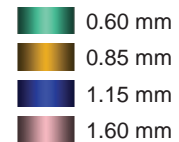
EIA CC1206 [C3216]

Capacitance Range Chart

Temperature Characteristics: NP0 (0 ± 30ppm/°C), X8R (±15%)
 Rated Voltage: 630V(2J), 450V(2W), 250V(2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)



Standard Thickness

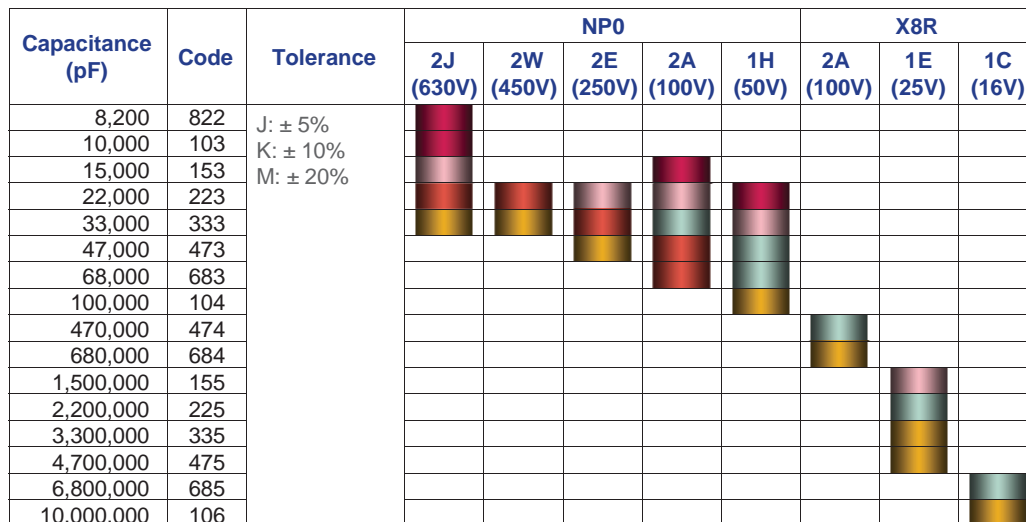


Capacitance Range Chart

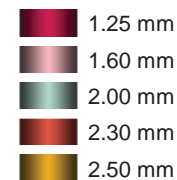
EIA CC1210 [C3225]

Capacitance Range Chart

Temperature Characteristics: NP0 (0 ± 30ppm/°C), X8R (±15%)
 Rated Voltage: 630V(2J), 450V(2W), 250V(2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)



Standard Thickness





Capacitance Range Chart

EIA CC1812 [C4532]

Capacitance Range Chart

Temperature Characteristics: NP0 (0 ± 30ppm/°C)
 Rated Voltage: 630V(2J), 450V(2W), 250V(2E), 100V (2A), 50V (1H)

| Capacitance (pF) | Code | Tolerance | NP0 | | | | | Standard Thickness |
|------------------|------|-----------|-----------|-----------|-----------|-----------|----------|--------------------|
| | | | 2J (630V) | 2W (450V) | 2E (250V) | 2A (100V) | 1H (50V) | |
| 33,000 | 333 | J: ± 5% | | | | | | 1.60 mm |
| 47,000 | 473 | | | | | | | 2.00 mm |
| 68,000 | 683 | | | | | | | 2.30 mm |
| 100,000 | 104 | | | | | | | 2.50 mm |
| 150,000 | 154 | | | | | | | 3.20 mm |
| 220,000 | 224 | | | | | | | |



Capacitance Range Chart

EIA CC2220 [C5750]

Capacitance Range Chart

Temperature Characteristics: NP0 (0 ± 30ppm/°C)
 Rated Voltage: 450V(2W), 250V(2E), 100V (2A)

| Capacitance (pF) | Code | Tolerance | NP0 | | | Standard Thickness |
|------------------|------|-----------|-----------|-----------|-----------|--------------------|
| | | | 2W (450V) | 2E (250V) | 2A (100V) | |
| 100,000 | 104 | J: ± 5% | | | | 2.30 mm |
| 150,000 | 154 | | | | | 2.80 mm |



Capacitance Range Table

Class 1 (Temperature Compensating)

Temperature Characteristics: NP0 (-55 to +150°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 | Rated Voltage Edc: 50V |
| 1 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H010C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | | C1608NP02A010C080AA | C1608NP01H010C080AA |
| 1.5 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H1R5C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A1R5C080AA | C1608NP01H1R5C080AA | |
| 2 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H020C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A020C080AA | C1608NP01H020C080AA | |
| 2.2 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H2R2C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A2R2C080AA | C1608NP01H2R2C080AA | |
| 3 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H030C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A030C080AA | C1608NP01H030C080AA | |
| 3.3 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H3R3C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A3R3C080AA | C1608NP01H3R3C080AA | |
| 4 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H040C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A040C080AA | C1608NP01H040C080AA | |
| 4.7 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H4R7C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A4R7C080AA | C1608NP01H4R7C080AA | |
| 5 pF | 1005 | 0.50 ± 0.05 | ± 0.25pF | | | | | C1005NP01H050C050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.25pF | | | C1608NP02A050C080AA | C1608NP01H050C080AA | |
| 6 pF | 1005 | 0.50 ± 0.05 | ± 0.50pF | | | | | C1005NP01H060D050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.50pF | | | C1608NP02A060D080AA | C1608NP01H060D080AA | |
| 6.8 pF | 1005 | 0.50 ± 0.05 | ± 0.50pF | | | | | C1005NP01H6R8D050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.50pF | | | C1608NP02A6R8D080AA | C1608NP01H6R8D080AA | |
| 7 pF | 1005 | 0.50 ± 0.05 | ± 0.50pF | | | | | C1005NP01H070D050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.50pF | | | C1608NP02A070D080AA | C1608NP01H070D080AA | |
| 8 pF | 1005 | 0.50 ± 0.05 | ± 0.50pF | | | | | C1005NP01H080D050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.50pF | | | C1608NP02A080D080AA | C1608NP01H080D080AA | |
| 9 pF | 1005 | 0.50 ± 0.05 | ± 0.50pF | | | | | C1005NP01H090D050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.50pF | | | C1608NP02A090D080AA | C1608NP01H090D080AA | |
| 10 pF | 1005 | 0.50 ± 0.05 | ± 0.50pF | | | | | C1005NP01H100D050BA |
| | 1608 | 0.80 ± 0.10 | ± 0.50pF | | | C1608NP02A100D080AA | C1608NP01H100D080AA | |
| 12 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H120J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A120J080AA | C1608NP01H120J080AA | |
| 15 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H150J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A150J080AA | C1608NP01H150J080AA | |
| 18 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H180J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A180J080AA | C1608NP01H180J080AA | |
| 22 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H220J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A220J080AA | C1608NP01H220J080AA | |
| 27 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H270J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A270J080AA | C1608NP01H270J080AA | |
| 33 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H330J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A330J080AA | C1608NP01H330J080AA | |
| 39 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H390J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A390J080AA | C1608NP01H390J080AA | |
| 47 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H470J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A470J080AA | C1608NP01H470J080AA | |
| 56 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H560J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A560J080AA | C1608NP01H560J080AA | |
| 68 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H680J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A680J080AA | C1608NP01H680J080AA | |
| 82 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H820J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A820J080AA | C1608NP01H820J080AA | |
| 100 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP02A101J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A101J080AA | C1608NP01H101J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | | C2012NP02W101J060AA | | | |
| 120 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP02A121J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A121J080AA | C1608NP01H121J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | | C2012NP02W121J060AA | | | |
| 150 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP02A151J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A151J080AA | C1608NP01H151J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | | C2012NP02W151J060AA | | | |
| 180 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP02A181J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | C1608NP02A181J080AA | C1608NP01H181J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | | C2012NP02W181J060AA | | | |



Capacitance Range Table

Class 1 (Temperature Compensating)

Temperature Characteristics: NP0 (-55 to +150°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 | Rated Voltage Edc: 50V |
| 220 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | C1005NP02A221J050BA | C1005NP01H221J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP02A221J080AA | C1608NP01H221J080AA |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W221J060AA | | | | |
| 270 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | C1005NP02A271J050BA | C1005NP01H271J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP02A271J080AA | C1608NP01H271J080AA |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W271J060AA | | | | |
| 330 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | C1005NP02A331J050BA | C1005NP01H331J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP02A331J080AA | C1608NP01H331J080AA |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W331J060AA | | | | |
| 390 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | C1005NP02A391J050BA | C1005NP01H391J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP02A391J080AA | C1608NP01H391J080AA |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W391J060AA | | | | |
| 470 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | C1005NP02A471J050BA | C1005NP01H471J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP02A471J080AA | C1608NP01H471J080AA |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W471J060AA | | | | |
| 560 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H561J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP02A561J080AA | C1608NP01H561J080AA |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W561J060AA | | | | |
| 680 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H681J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP02A681J080AA | C1608NP01H681J080AA |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W681J060AA | | | | |
| 820 pF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H821J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | C1608NP02E821J080AA | C1608NP02A821J080AA | C1608NP01H821J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W821J060AA | | | | |
| 1 nF | 1005 | 0.50 ± 0.05 | ± 5% | | | | | C1005NP01H102J050BA |
| | 1608 | 0.80 ± 0.10 | ± 5% | | C1608NP02E102J080AA | C1608NP02A102J080AA | C1608NP01H102J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W102J060AA | | | | |
| 1.2 nF | 1608 | 0.80 ± 0.10 | ± 5% | | C1608NP02E122J080AA | C1608NP02A122J080AA | C1608NP01H122J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W122J060AA | | | | |
| | 1608 | 0.80 ± 0.10 | ± 5% | | C1608NP02E152J080AA | C1608NP02A152J080AA | C1608NP01H152J080AA | |
| 1.5 nF | 2012 | 0.60 ± 0.15 | ± 5% | | | | C2012NP02A152J060AA | |
| | | 0.85 ± 0.15 | ± 5% | C2012NP02W152J085AA | | | | |
| | 1608 | 0.80 ± 0.10 | ± 5% | | C1608NP02E182J080AA | C1608NP02A182J080AA | C1608NP01H182J080AA | |
| 1.8 nF | 2012 | 0.85 ± 0.15 | ± 5% | C2012NP02W182J085AA | | | | |
| | 1608 | 0.80 ± 0.10 | ± 5% | | C1608NP02E222J080AA | C1608NP02A222J080AA | C1608NP01H222J080AA | |
| | 2012 | 0.85 ± 0.15 | ± 5% | C2012NP02W222J085AA | | | | |
| 2.7 nF | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP01H272J080AA | |
| | | 0.80±0.15/-0.1 | ± 5% | | | | C1608NP02A272J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | | | | C2012NP01H272J060AA | |
| | | 1.25 ± 0.20 | ± 5% | C2012NP02W272J125AA | | | | |
| | | 1.25 ± 0.20 | ± 5% | | | | C2012NP02A272J125AA | |
| 3.3 nF | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP01H332J080AA | |
| | | 0.80 + 0.15/-0.1 | ± 5% | | | | C1608NP02A332J080AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | | | | C2012NP01H332J060AA | |
| | | 0.85 ± 0.15 | ± 5% | | C2012NP02E332J085AA | | | |
| | | 1.25 ± 0.20 | ± 5% | C2012NP02W332J125AA | | | | |
| | | 1.25 ± 0.20 | ± 5% | | | | C2012NP02A332J125AA | |
| 3.9 nF | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP01H392J080AA | |
| | | 0.60 ± 0.15 | ± 5% | | | | C2012NP01H392J060AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | C2012NP02W392J125AA | C2012NP02E392J125AA | C2012NP02A392J125AA | | |
| | 3216 | 0.85 ± 0.15 | ± 5% | C3216NP02J392J085AA | | | | |
| | 3216 | 0.85 ± 0.15 | ± 5% | | | | C3216NP02A392J060AA | |
| 4.7 nF | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP01H472J080AA | |
| | | 0.60 ± 0.15 | ± 5% | | | | C2012NP01H472J060AA | |
| | 2012 | 1.25 ± 0.20 | ± 5% | C2012NP02W472J125AA | C2012NP02E472J125AA | C2012NP02A472J125AA | | |
| | 3216 | 0.60 ± 0.15 | ± 5% | | | | C3216NP01H472J060AA | |
| | 3216 | 0.85 ± 0.15 | ± 5% | C3216NP02J472J085AA | | | | |
| | 3216 | 0.85 ± 0.15 | ± 5% | | | | C3216NP02A472J085AA | |
| 5.6 nF | 1608 | 0.80 ± 0.10 | ± 5% | | | | C1608NP01H562J080AA | |
| | | 0.60 ± 0.15 | ± 5% | | | | C2012NP01H562J060AA | |
| | 2012 | 1.25 ± 0.20 | ± 5% | C2012NP02W562J125AA | C2012NP02E562J125AA | C2012NP02A562J125AA | | |
| | 3216 | 0.60 ± 0.15 | ± 5% | | | | C3216NP01H562J060AA | |
| | 3216 | 0.85 ± 0.15 | ± 5% | | | | C3216NP02A562J085AA | |
| | | 1.15 ± 0.15 | ± 5% | C3216NP02J562J115AA | | | | |



Capacitance Range Table

Class 1 (Temperature Compensating)

Temperature Characteristics: NP0 (-55 to +150°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 | Rated Voltage Edc: 50V |
| 6.8 nF | 1608 | 0.80 ± 0.10 | ± 5% | | | | | C1608NP01H682J080AA |
| | | 0.60 ± 0.15 | ± 5% | | | | | C2012NP01H682J060AA |
| | 2012 | 1.25 ± 0.20 | ± 5% | | | C2012NP02E682J125AA | C2012NP02A682J125AA | |
| | | 0.60 ± 0.15 | ± 5% | | | | | C3216NP01H682J060AA |
| 3216 | 1.15 ± 0.15 | ± 5% | C3216NP02J682J115AA | C3216NP02W682J115AA | | C3216NP02A682J115AA | | |
| | 0.80 ± 0.10 | ± 5% | | | | | C1608NP01H822J080AA | |
| 8.2 nF | 1608 | 0.60 ± 0.15 | ± 5% | | | | | C2012NP01H822J060AA |
| | | 1.25 ± 0.20 | ± 5% | | | C2012NP02E822J125AA | C2012NP02A822J125AA | |
| | 2012 | 0.60 ± 0.15 | ± 5% | | | | | C3216NP01H822J060AA |
| | | 1.15 ± 0.15 | ± 5% | | C3216NP02W822J115AA | | C3216NP02A822J115AA | |
| 3216 | 1.60 ± 0.20 | ± 5% | C3216NP02J822J160AA | | | | | |
| | 1.25 ± 0.20 | ± 5% | C3225NP02J822J125AA | | | | | |
| 10 nF | 1608 | 0.80 ± 0.10 | ± 5% | | | | | C1608NP01H103J080AA |
| | | 0.60 ± 0.15 | ± 5% | | | | | C2012NP01H103J060AA |
| | 2012 | 1.25 ± 0.20 | ± 5% | | | C2012NP02E103J125AA | C2012NP02A103J125AA | |
| | | 0.60 ± 0.15 | ± 5% | | | | | C3216NP01H103J060AA |
| 3216 | 1.15 ± 0.15 | ± 5% | | | C3216NP02E103J115AA | C3216NP02A103J115AA | | |
| | 1.60 ± 0.20 | ± 5% | C3216NP02J103J160AA | C3216NP02W103J160AA | | | | |
| 3225 | 1.25 ± 0.20 | ± 5% | C3225NP02J103J125AA | | | | | |
| | 0.85 ± 0.15 | ± 5% | | | | | C2012NP01H153J085AA | |
| 15 nF | 2012 | 0.60 ± 0.15 | ± 5% | | | | | C3216NP01H153J060AA |
| | | 1.15 ± 0.15 | ± 5% | | | | C3216NP02A153J115AA | |
| | 3216 | 1.60 ± 0.20 | ± 5% | | C3216NP02W153J160AA | C3216NP02E153J160AA | | |
| | | 1.25 ± 0.20 | ± 5% | | | | C3225NP02A153J125AA | |
| 3225 | 1.60 ± 0.20 | ± 5% | C3225NP02J153J160AA | | | | | |
| | 1.25 ± 0.20 | ± 5% | | | | | C2012NP01H223J125AA | |
| 22 nF | 2012 | 0.60 ± 0.15 | ± 5% | | | | | C3216NP01H223J060AA |
| | | 1.60 ± 0.20 | ± 5% | | | C3216NP02E223J160AA | C3216NP02A223J160AA | |
| | 3216 | 1.25 ± 0.20 | ± 5% | | | | | C3225NP01H223J125AA |
| | | 1.60 ± 0.20 | ± 5% | | C3225NP02E223J160AA | C3225NP02A223J160AA | | |
| 3225 | 2.30 ± 0.20 | ± 5% | C3225NP02J223J230AA | C3225NP02W223J230AA | | | | |
| | 1.25 ± 0.20 | ± 5% | | | | | C2012NP01H333J125AA | |
| 33 nF | 2012 | 0.85 ± 0.15 | ± 5% | | | | | C3216NP01H333J085AA |
| | | 1.60 ± 0.20 | ± 5% | | | | C3216NP02A333J160AA | |
| | 3216 | 1.60 ± 0.20 | ± 5% | | | | | C3225NP01H333J160AA |
| | | 2.00 ± 0.20 | ± 5% | | | | C3225NP02A333J200AA | |
| 3225 | 2.30 ± 0.20 | ± 5% | | | C3225NP02E333J230AA | | | |
| | 2.50 ± 0.30 | ± 5% | C3225NP02J333J250AA | C3225NP02W333J250AA | | | | |
| 4532 | 2.00 ± 0.20 | ± 5% | C4532NP02J333J200KA | | | | | |
| | 1.15 ± 0.15 | ± 5% | | | | | C3216NP01H473J115AA | |
| 47 nF | 3216 | 2.00 ± 0.20 | ± 5% | | | | | C3225NP01H473J200AA |
| | | 2.30 ± 0.20 | ± 5% | | | | C3225NP02A473J230AA | |
| | 3225 | 2.50 ± 0.30 | ± 5% | | | C3225NP02E473J250AA | | |
| | | 1.60 ± 0.20 | ± 5% | | | | | C4532NP01H473J160KA |
| 4532 | 2.00 ± 0.20 | ± 5% | | | | | C4532NP02A473J200KA | |
| | 2.30 ± 0.20 | ± 5% | | C4532NP02W473J230KA | | | | |
| 3216 | 3.20 ± 0.30 | ± 5% | C4532NP02J473J320KA | | | | | |
| | 1.60 ± 0.20 | ± 5% | | | | | C3216NP01H683J160AA | |
| 68 nF | 3225 | 2.00 ± 0.20 | ± 5% | | | | | C3225NP01H683J200AA |
| | | 2.30 ± 0.20 | ± 5% | | | | C3225NP02A683J230AA | |
| | 4532 | 1.60 ± 0.20 | ± 5% | | | | | C4532NP01H683J160KA |
| | | 2.30 ± 0.20 | ± 5% | | C4532NP02E683J230KN | | | |
| 4532 | 2.50 ± 0.30 | ± 5% | | | | C4532NP02A683J250KA | | |
| | 3.20 ± 0.30 | ± 5% | | C4532NP02W683J320KA | | | | |
| 100 nF | 3216 | 1.60 ± 0.20 | ± 5% | | | | | C3216NP01H104J160AA |
| | | 2.50 ± 0.30 | ± 5% | | | | | C3225NP01H104J250AA |
| | 3225 | 2.00 ± 0.20 | ± 5% | | | | | C4532NP01H104J200KA |
| | | 3.20 ± 0.30 | ± 5% | | | C4532NP02E104J320KN | C4532NP02A104J320KA | |
| 5750 | 2.80 ± 0.30 | ± 5% | | C5750NP02W104J280KA | | | | |
| | 2.50 ± 0.30 | ± 5% | | | | | C4532NP01H154J250KA | |
| 150 nF | 5750 | 2.30 ± 0.20 | ± 5% | | | C5750NP02E154J230KN | C5750NP02A154J230KA | |
| | | 3.20 ± 0.30 | ± 5% | | | | | C4532NP01H224J320KA |





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 |
| 150 pF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A151K050BA | C1005X8R1H151K050BA | | |
| | | | ± 20% | C1005X8R2A151M050BA | C1005X8R1H151M050BA | | |
| 220 pF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A221K050BA | C1005X8R1H221K050BA | | |
| | | | ± 20% | C1005X8R2A221M050BA | C1005X8R1H221M050BA | | |
| 330 pF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A331K050BA | C1005X8R1H331K050BA | | |
| | | | ± 20% | C1005X8R2A331M050BA | C1005X8R1H331M050BA | | |
| 470 pF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A471K050BA | C1005X8R1H471K050BA | | |
| | | | ± 20% | C1005X8R2A471M050BA | C1005X8R1H471M050BA | | |
| 680 pF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A681K050BA | C1005X8R1H681K050BA | | |
| | | | ± 20% | C1005X8R2A681M050BA | C1005X8R1H681M050BA | | |
| 1 nF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A102K050BA | C1005X8R1H102K050BA | | |
| | | | ± 20% | C1005X8R2A102M050BA | C1005X8R1H102M050BA | | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A102K080AA | C1608X8R1H102K080AA | | |
| | | | ± 20% | C1608X8R2A102M080AA | C1608X8R1H102M080AA | | |
| 1.5 nF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A152K050BA | C1005X8R1H152K050BA | | |
| | | | ± 20% | C1005X8R2A152M050BA | C1005X8R1H152M050BA | | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A152K080AA | C1608X8R1H152K080AA | | |
| | | | ± 20% | C1608X8R2A152M080AA | C1608X8R1H152M080AA | | |
| 2.2 nF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A222K050BA | C1005X8R1H222K050BA | | |
| | | | ± 20% | C1005X8R2A222M050BA | C1005X8R1H222M050BA | | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A222K080AA | C1608X8R1H222K080AA | | |
| | | | ± 20% | C1608X8R2A222M080AA | C1608X8R1H222M080AA | | |
| 3.3 nF | 1005 | 0.50 ± 0.05 | ± 10% | C1005X8R2A332K050BB | C1005X8R1H332K050BA | | |
| | | | ± 20% | C1005X8R2A332M050BB | C1005X8R1H332M050BA | | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A332K080AA | C1608X8R1H332K080AA | | |
| | | | ± 20% | C1608X8R2A332M080AA | C1608X8R1H332M080AA | | |
| 4.7 nF | 1005 | 0.50 ± 0.05 | ± 10% | | C1005X8R1H472K050BA | | |
| | | | ± 20% | | C1005X8R1H472M050BA | | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A472K080AA | C1608X8R1H472K080AA | | |
| | | | ± 20% | C1608X8R2A472M080AA | C1608X8R1H472M080AA | | |
| 6.8 nF | 1005 | 0.50 ± 0.05 | ± 10% | | C1005X8R1H682K050BB | C1005X8R1E682K050BA | |
| | | | ± 20% | | C1005X8R1H682M050BB | C1005X8R1E682M050BA | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A682K080AA | C1608X8R1H682K080AA | | |
| | | | ± 20% | C1608X8R2A682M080AA | C1608X8R1H682M080AA | | |
| 10 nF | 1005 | 0.50 ± 0.05 | ± 10% | | C1005X8R1H103K050BB | C1005X8R1E103K050BA | |
| | | | ± 20% | | C1005X8R1H103M050BB | C1005X8R1E103M050BA | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A103K080AA | C1608X8R1H103K080AA | | |
| | | | ± 20% | C1608X8R2A103M080AA | C1608X8R1H103M080AA | | |
| 15 nF | 1005 | 0.50 ± 0.05 | ± 10% | | | C1005X8R1E153K050BB | |
| | | | ± 20% | | | C1005X8R1E153M050BB | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A153K080AA | C1608X8R1H153K080AA | | |
| | | | ± 20% | C1608X8R2A153M080AA | C1608X8R1H153M080AA | | |
| 22 nF | 1005 | 0.50 ± 0.05 | ± 10% | | | C1005X8R1E223K050BB | |
| | | | ± 20% | | | C1005X8R1E223M050BB | |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A223K080AB | C1608X8R1H223K080AA | | |
| | | | ± 20% | C1608X8R2A223M080AB | C1608X8R1H223M080AA | | |
| 2012 | 1.25 ± 0.20 | ± 10% | C2012X8R2A223K125AA | | | | |
| | | ± 20% | C2012X8R2A223M125AA | | | | |
| 33 nF | 1005 | 0.50 ± 0.05 | ± 10% | | | | C1005X8R1C333K050BB |
| | | | ± 20% | | | | C1005X8R1C333M050BB |
| | 1608 | 0.80 ± 0.10 | ± 10% | C1608X8R2A333K080AB | C1608X8R1H333K080AA | | |
| | | | ± 20% | C1608X8R2A333M080AB | C1608X8R1H333M080AA | | |
| | 2012 | 1.25 ± 0.20 | ± 10% | C2012X8R2A333K125AB | | | |
| | | | ± 20% | C2012X8R2A333M125AB | | | |
| 3216 | 0.85 ± 0.15 | ± 10% | C3216X8R2A333K085AA | | | | |
| | | ± 20% | C3216X8R2A333M085AA | | | | |



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 |
| 47 nF | 1005 | 0.50 ± 0.05 | ± 10% | | | | C1005X8R1C473K050BB |
| | | | ± 20% | | | | C1005X8R1C473M050BB |
| | 1608 | 0.80 ± 0.10 | ± 10% | | C1608X8R1H473K080AA | | |
| | | | ± 20% | | C1608X8R1H473M080AA | | |
| 2012 | 1.25 ± 0.20 | ± 10% | C2012X8R2A473K125AB | | | | |
| | | ± 20% | C2012X8R2A473M125AB | | | | |
| 3216 | 0.85 ± 0.15 | ± 10% | C3216X8R2A473K085AA | | | | |
| | | ± 20% | C3216X8R2A473M085AA | | | | |
| 68 nF | 1608 | 0.80 ± 0.10 | ± 10% | | C1608X8R1H683K080AB | C1608X8R1E683K080AA | |
| | | | ± 20% | | C1608X8R1H683M080AB | C1608X8R1E683M080AA | |
| | 2012 | 1.25 ± 0.20 | ± 10% | C2012X8R2A683K125AB | C2012X8R1H683K125AA | | |
| | | | ± 20% | C2012X8R2A683M125AB | C2012X8R1H683M125AA | | |
| 3216 | 1.15 ± 0.15 | ± 10% | C3216X8R2A683K115AA | | | | |
| | | ± 20% | C3216X8R2A683M115AA | | | | |
| 100 nF | 1608 | 0.80 ± 0.10 | ± 10% | | C1608X8R1H104K080AB | C1608X8R1E104K080AA | |
| | | | ± 20% | | C1608X8R1H104M080AB | C1608X8R1E104M080AA | |
| | 2012 | 1.25 ± 0.20 | ± 10% | | C2012X8R1H104K125AA | | |
| | | | ± 20% | | C2012X8R1H104M125AA | | |
| 3216 | 1.15 ± 0.15 | ± 10% | C3216X8R2A104K115AA | | | | |
| | | ± 20% | C3216X8R2A104M115AA | | | | |
| 150 nF | 1608 | 0.80 ± 0.10 | ± 10% | | | C1608X8R1E154K080AB | |
| | | | ± 20% | | | C1608X8R1E154M080AB | |
| | 2012 | 0.85 ± 0.15 | ± 10% | | | C2012X8R1E154K085AA | |
| | | | ± 20% | | | C2012X8R1E154M085AA | |
| | 3216 | 0.85 ± 0.15 | ± 10% | | C3216X8R1H154K125AB | | |
| | | | ± 20% | | C3216X8R1H154M125AB | | |
| 3216 | 1.60 ± 0.20 | ± 10% | C3216X8R2A154K160AA | | | | |
| | | ± 20% | C3216X8R2A154M160AA | | | | |
| 220 nF | 1608 | 0.80 ± 0.10 | ± 10% | | | C1608X8R1E224K080AB | |
| | | | ± 20% | | | C1608X8R1E224M080AB | |
| | 2012 | 1.25 ± 0.20 | ± 10% | | C2012X8R1H224K125AB | C2012X8R1E224K125AA | |
| | | | ± 20% | | C2012X8R1H224M125AB | C2012X8R1E224M125AA | |
| | 3216 | 1.15 ± 0.15 | ± 10% | | C3216X8R1H224K115AA | | |
| | | | ± 20% | | C3216X8R1H224M115AA | | |
| 3216 | 1.60 ± 0.20 | ± 10% | C3216X8R2A224K160AB | | | | |
| | | ± 20% | C3216X8R2A224M160AB | | | | |
| 330 nF | 1608 | 0.80 ± 0.10 | ± 10% | | | | C1608X8R1C334K080AB |
| | | | ± 20% | | | | C1608X8R1C334M080AB |
| | 2012 | 1.25 ± 0.20 | ± 10% | | | C2012X8R1E334K125AA | |
| | | | ± 20% | | | C2012X8R1E334M125AA | |
| 3216 | 0.85 ± 0.15 | ± 10% | | | C3216X8R1E334K085AA | | |
| | | ± 20% | | | C3216X8R1E334M085AA | | |
| 470 nF | 1608 | 0.80 ± 0.10 | ± 10% | | | | C1608X8R1C474K080AB |
| | | | ± 20% | | | | C1608X8R1C474M080AB |
| | 2012 | 1.25 ± 0.20 | ± 10% | | | C2012X8R1E474K125AB | |
| | | | ± 20% | | | C2012X8R1E474M125AB | |
| | 3216 | 0.85 ± 0.15 | ± 10% | | | C3216X8R1E474K085AA | |
| | | | ± 20% | | | C3216X8R1E474M085AA | |
| 3216 | 1.60 ± 0.20 | ± 10% | | C3216X8R1H474K160AA | | | |
| | | ± 20% | | C3216X8R1H474M160AA | | | |
| 3225 | 2.00 ± 0.20 | ± 10% | C3225X8R2A474K200AB | | | | |
| | | ± 20% | C3225X8R2A474M200AB | | | | |



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 |
| 680 nF | 2012 | 1.25 ± 0.20 | ± 10% | | | | C2012X8R1C684K125AB |
| | | | ± 20% | | | | C2012X8R1C684M125AB |
| | 3216 | 1.15 ± 0.15 | ± 10% | | | C3216X8R1E684K115AA | |
| | | | ± 20% | | | C3216X8R1E684M115AA | |
| | 3216 | 1.60 ± 0.20 | ± 10% | | C3216X8R1H684K160AB | | |
| | | | ± 20% | | C3216X8R1H684M160AB | | |
| 3225 | 2.50 ± 0.30 | ± 10% | C3225X8R2A684K250AB | | | | |
| | | ± 20% | C3225X8R2A684M250AB | | | | |
| 1 µF | 2012 | 1.25 ± 0.20 | ± 10% | | | | C2012X8R1C105K125AB |
| | | | ± 20% | | | | C2012X8R1C105M125AB |
| 3216 | 1.60 ± 0.20 | ± 10% | | C3216X8R1H105K160AB | C3216X8R1E105K160AA | | |
| | | ± 20% | | C3216X8R1H105M160AB | C3216X8R1E105M160AA | | |
| 1.5 µF | 3216 | 1.60 ± 0.20 | ± 10% | | | C3216X8R1E155K160AB | |
| | | | ± 20% | | | C3216X8R1E155M160AB | |
| 3225 | 1.60 ± 0.20 | ± 10% | | | C3225X8R1E155K160AA | | |
| | | ± 20% | | | C3225X8R1E155M160AA | | |
| 2.2 µF | 3216 | 1.60 ± 0.20 | ± 10% | | | C3216X8R1E225K160AB | |
| | | | ± 20% | | | C3216X8R1E225M160AB | |
| 3225 | 2.00 ± 0.20 | ± 10% | | | C3225X8R1E225K200AA | | |
| | | ± 20% | | | C3225X8R1E225M200AA | | |
| 3.3 µF | 3216 | 1.60 ± 0.20 | ± 10% | | | | C3216X8R1C335K160AB |
| | | | ± 20% | | | | C3216X8R1C335M160AB |
| 3225 | 2.50 ± 0.30 | ± 10% | | | C3225X8R1E335K250AA | | |
| | | ± 20% | | | C3225X8R1E335M250AA | | |
| 4.7 µF | 3216 | 1.60 ± 0.20 | ± 10% | | | | C3216X8R1C475K160AB |
| | | | ± 20% | | | | C3216X8R1C475M160AB |
| 3225 | 2.50 ± 0.30 | ± 10% | | | C3225X8R1E475K250AB | | |
| | | ± 20% | | | C3225X8R1E475M250AB | | |
| 6.8 µF | 3225 | 2.00 ± 0.20 | ± 10% | | | | C3225X8R1C685K200AB |
| | | | ± 20% | | | | C3225X8R1C685M200AB |
| 10 µF | 3225 | 2.50 ± 0.30 | ± 10% | | | | C3225X8R1C106K250AB |
| | | | ± 20% | | | | C3225X8R1C106M250AB |