



**THE DATASHEET OF
C0603X5R1E102KT00NN**



C.3216.X7R.1H.105.K.160.

| Series Name | |
|-------------|----------------------|
| Description | |
| C | General Purpose |
| CKC | Array |
| CKG | MEGACAP |
| CLL | Ultra Low Inductance |

| Case Size Code | | | |
|----------------|------|-----|-----|
| C | CKC | CKG | CLL |
| 0.40 x 0.20 | 0402 | | |
| 0.50 x 1.00 | 0510 | | |
| 0.60 x 0.30 | 0603 | | |
| 0.80 x 1.60 | 0816 | | |
| 0.90 x 0.60 | N27 | | |
| 1.00 x 0.50 | 1005 | | |
| 1.25 x 2.00 | 1220 | | |
| 1.37 x 1.00 | M25 | | |
| 1.60 x 0.80 | 1608 | C1A | |
| 1.60 x 3.20 | 1632 | | |
| 2.00 x 1.25 | 2012 | L22 | E1A |
| | | L44 | |
| 3.20 x 1.60 | 3216 | A43 | G1A |
| 3.20 x 2.50 | 3225 | | |
| 3.80 x 2.90 | | 32K | |
| 4.50 x 2.00 | 4520 | | |
| 4.50 x 3.20 | 4532 | | |
| 5.50 x 4.00 | | 45K | |
| | | 45N | |
| 5.70 x 5.00 | 5750 | | |
| 6.50 x 5.50 | | 57K | |
| | | 57N | |
| 7.50 x 6.30 | 7563 | | |

| Temperature Characteristics | | |
|-----------------------------|-----------------------------------|-------------|
| Temperature | Temperature Coefficient or Change | Capacitance |
| CH | -25°C to +85°C | 0±60ppm/°C |
| C0G | -55°C to +125°C | 0±30ppm/°C |
| NP0 | -55°C to +150°C | 0±30ppm/°C |
| JB | -25°C to +85°C | ±10% |
| X5R | -55°C to +85°C | ±15% |
| X6S | -55°C to +105°C | ±22% |
| X7R | -55°C to +125°C | ±15% |
| X7S | -55°C to +125°C | ±22% |
| X7T | -55°C to +125°C | +22, -33% |
| X8R | -55°C to +150°C | ±15% |

| Capacitance Tolerance | |
|-----------------------|----------|
| Description | |
| B | ±0.10 pF |
| C | ±0.25 pF |
| D | ±0.50 pF |
| F | ±1% |
| G | ±2% |
| J | ±5% |
| K | ±10% |
| M | ±20% |

| Thickness Code | |
|----------------|---------|
| Description | |
| 020 | 0.20 mm |
| 030 | 0.30 mm |
| 045 | 0.45 mm |
| 050 | 0.50 mm |
| 055 | 0.55 mm |
| 060 | 0.60 mm |
| 070 | 0.70 mm |
| 080 | 0.80 mm |
| 085 | 0.85 mm |
| 100 | 1.00 mm |
| 110 | 1.10 mm |
| 115 | 1.15 mm |
| 125 | 1.25 mm |
| 130 | 1.30 mm |
| 160 | 1.60 mm |
| 200 | 2.00 mm |
| 230 | 2.30 mm |
| 250 | 2.50 mm |
| 280 | 2.80 mm |
| 290 | 2.90 mm |
| 320 | 3.20 mm |
| 335 | 3.35 mm |
| 500 | 5.00 mm |

| Rated Voltage Code | | | | | | | | | |
|--------------------|------|------|------|----|-----|------|------|-----|------|
| A | C | D | E | F | G | H | J | V | W |
| 0 | | | | 4V | | | 6.3V | | |
| 1 | 10V | 16V | 25V | | 50V | | | 35V | |
| 2 | 100V | 200V | 250V | | | 630V | | | 450V |
| 3 | 1KV | 2KV | 3KV | | | | | | |

Nominal Capacitance

The capacitance is expressed in three digit codes as follows:
 The first and second digits identify the first and second significant digits of the nominal capacitance.
 The third digit identifies the multiplier or power of ten point.
 Ex. 0R2 = 0.2pF; 103 = 10,000pF; 105 = 1,000,000pF

CGA.5.L.3.X7R.1H.105.K.16

| Series Name | |
|-------------|------------------------|
| Description | |
| CGA | Automotive Grade |
| CGJ | High Reliability Grade |
| CEU | Serial Design |

| Case Size Code | | |
|----------------|-----|-----|
| CGA | CGJ | CEU |
| 0.60 x 0.30 | 1 | |
| 1.00 x 0.50 | 2 | 2 |
| 1.60 x 0.80 | 3 | 3 |
| 2.00 x 1.25 | 4 | 4 |
| 3.20 x 1.60 | 5 | 5 |
| 3.20 x 2.50 | 6 | |
| 4.50 x 2.00 | 7 | |
| 4.50 x 3.20 | 8 | |
| 5.70 x 5.00 | 9 | |

| Thickness Code | |
|----------------|---------|
| Description | |
| A | 0.30 mm |
| B | 0.50 mm |
| C | 0.60 mm |
| E | 0.80 mm |
| F | 0.85 mm |
| G | 1.10 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 |

| Capacitance Tolerance | |
|-----------------------|-----------|
| Description | |
| C | ± 0.25 pF |
| D | ± 0.50 pF |
| F | ± 1% |
| J | ± 5% |
| K | ± 10% |
| M | ± 20% |

Nominal Capacitance

The capacitance is expressed in three digit code (pF). The first and second digits identify the first two of the capacitance. The third digit identifies the decimal point.
 Ex. 0R2 = 0.2pF; 103 = 10,000pF; 105 = 1,000,000pF

| Life Test Condition or Function Identification Code | |
|---|---------------------|
| Description | |
| 1 | 1.0 x Rated Voltage |
| 2 | 2.0 x Rated Voltage |
| 3 | 1.5 x Rated Voltage |
| 4 | 1.2 x Rated Voltage |
| A | ESD Protection |

| Temperature Characteristics | | |
|-----------------------------|-----------------|-----------------------------------|
| Temperature | Temperature | Coefficient of Capacitance Change |
| C0G | -55°C to +125°C | 0±30ppm/°C |
| NP0 | -55°C to +150°C | 0±30ppm/°C |
| X5R | -55°C to +85°C | ±15% |
| X6S | -55°C to +105°C | ±22% |
| X7R | -55°C to +125°C | ±15% |
| X7S | -55°C to +125°C | ±22% |
| X7T | -55°C to +125°C | +22, -33% |
| X8R | -55°C to +150°C | ±15% |

| Rated Voltage Code | | | | | | |
|--------------------|------|------|------|------|------|-----|
| A | C | D | E | F | H | J |
| 0 | | | | | | 6.3 |
| 1 | 10V | 16V | 25V | 50V | | |
| 2 | 100V | 200V | 250V | 500V | 630V | |
| 3 | 1KV | 2KV | | 3KV | | |

CGB.3.C.1.X5R.0J.106.M.06

| Series Name | Description |
|-------------|-------------|
| CGB | Low Profile |

| Case Size Code | CGB |
|----------------|-----|
| 0.60 x 0.30 | 1 |
| 1.00 x 0.50 | 2 |
| 1.60 x 0.80 | 3 |
| 2.00 x 1.25 | 4 |

| Thickness Code | Description |
|----------------|--------------|
| T | 0.22 mm max. |
| A | 0.33 mm max. |
| S | 0.50 mm max. |
| B | 0.55 mm max. |
| C | 0.65 mm max. |

| Capacitance Tolerance | Description |
|-----------------------|-------------|
| K | ±10% |
| M | ±20% |

Nominal Capacitance

The capacitance is expressed in three digit codes (pF). The first and second digits identify the first of the capacitance. The third digit identifies the decimal point.
 Ex. 0R2 = 0.2pF; 103 = 10,000pF; 105 = 1,000,000



| Life Test Condition | Description |
|---------------------|---------------------|
| 1 | 1.0 x Rated Voltage |
| 3 | 1.5 x Rated Voltage |

| Temperature Characteristics | Temperature | Tolerance |
|-----------------------------|-----------------|-----------|
| JB | -25°C to +85°C | ±10% |
| X5R | -55°C to +85°C | ±15% |
| X6S | -55°C to +105°C | ±22% |
| X7R | -55°C to +125°C | ±15% |
| X7S | -55°C to +125°C | ±22% |

| Rated Voltage Code | G | J | A | C | E |
|--------------------|----|------|-----|-----|-----|
| 0 | 4V | 6.3V | 10V | 16V | 25V |
| 1 | | | | | |

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