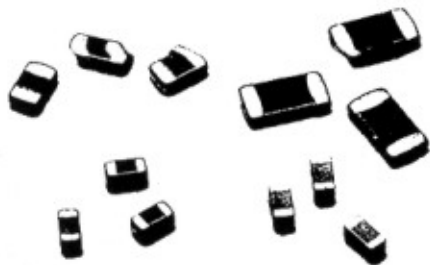


Multilayer Ceramic Chip Capacitor/CC Series



INTRODUCTIONS

Yageo CC Series MLCC is Made by Either Pd/Ag or Nickel Electrode System and Offering Full Range of Chip Ceramic Capacitor in 10, 16, 25, 50, 100, 200, 250, 500V Ratings.

The Dielectric Material of CC Series Ranging is involved NPO, X7R, Y5V.

The CC Series Chip Capacitor Has Much Lower ESR and ESL Than Most Leaded Type Capacitor, and Its Lower Dissipation Factor Leads to Lower Power is Wasted Than Aluminum Electrolytic and Tantalum Capacitors.

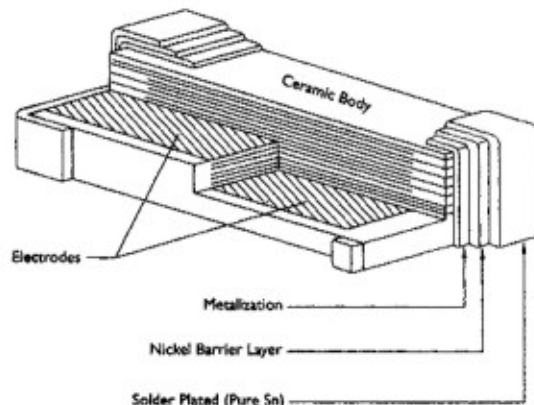
FEATURES

Standard EIA Chip Size Available

Wide Range of Capacitance 0.47pF~10uF is Available for Various Circuit Needs

The CC Series is Available in Both Paper and Plastic Embossed Tape and Reel Packaging for Automatic SMD Placement

Rugged Termination is Capable to Use at Both Reflow and Wave Soldering System



DIMENSIONS

Unit : mm



| STYLE | L | W | T | | L ₁ : L ₂ | | L ₃ |
|--------|----------|-----------|------|------|---------------------------------|------|----------------|
| | | | Min. | Max. | Min. | Max. | Min. |
| CC0402 | 1.0±0.05 | 0.5±0.05 | 0.45 | 0.55 | 0.15 | 0.30 | 0.40 |
| CC0603 | 1.6±0.10 | 0.8±0.07 | 0.73 | 0.87 | 0.20 | 0.60 | 0.40 |
| CC0805 | 2.0±0.10 | 1.25±0.10 | 0.50 | 1.35 | 0.25 | 0.75 | 0.55 |
| CC1206 | 3.2±0.15 | 1.6±0.15 | 0.50 | 1.75 | 0.25 | 0.75 | 1.40 |
| CC1210 | 3.2±0.20 | 2.5±0.20 | 0.50 | 1.80 | 0.25 | 0.75 | 1.40 |
| CC1812 | 4.5±0.20 | 3.2±0.20 | 0.50 | 1.80 | 0.25 | 0.75 | 2.20 |

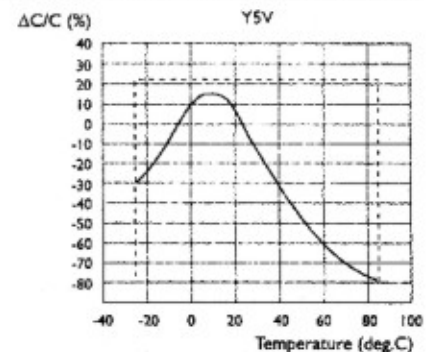
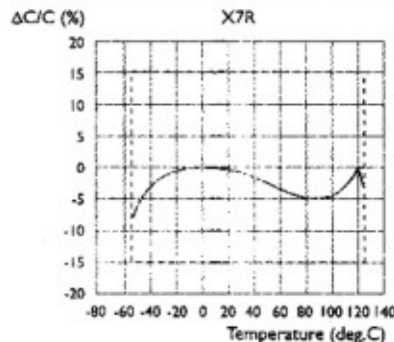
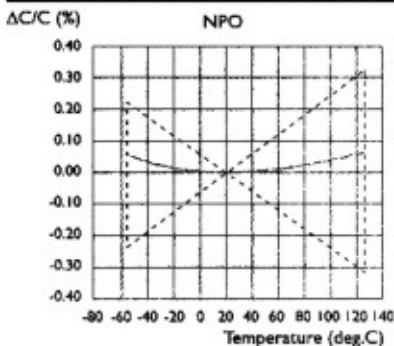
ELECTRICAL CHARACTERISTICS

| CHARACTERISTICS | TEST CONDITIONS | REQUIREMENT | | |
|---------------------------------|--|--|---|---|
| | | CLASS I | CLASS II | |
| | | NPO | X7R | Y5V |
| Operation Temperature Range | | -55°C to 125°C | -55°C to 125°C | -25°C to 85°C |
| Temperature | With Respect to 20°C (25°C for Y5V) | NPO 16V, 0±60ppm/K | ±15% | +30% to -80% |
| Characteristic/Coefficient (TC) | Within Operation Temperature Range | NPO > 16V, 0±30ppm/K | | |
| Capacitance Tolerance | With Respect to 20°C (25°C for Y5V) | In Accordance with Specification | | |
| Dissipation Factor (Tanδ) | NPO: C ≤ 1000pF; 1Vrms/1MHz C > 1000pF; 1Vrms/1kHz X7R/Y5V: 1Vrms/1kHz | C < 10pF: Tanδ ≤ 10 (3/C+0.7) × 10 ⁻⁴ or 30 × 10 ⁻⁴ Whichever is Less C ≥ 10pF Tanδ ≤ 10 × 10 ⁻⁴ | U _r = 10V; Tanδ ≤ 5% U _r = 16V; Tanδ ≤ 3.5% U _r ≥ 25V; Tanδ ≤ 2.5% | U _r = 10V; Tanδ ≤ 12.5% U _r = 16V; Tanδ ≤ 9% or ≤ 12.5% Depending on Capacitance Value U _r ≥ 25V; Tanδ ≤ 5% or ≤ 7% Depending on Capacitance Value |
| Insulation Resistance (IR) | At U _r (Rated Voltage) for 1 Minute 500V for U _r ≥ 500V | R _{ins} ≥ 10GΩ or R _{ins} × C ≥ 500s Whichever is Less | R _{ins} ≥ 10GΩ or R _{ins} × C ≥ 500s Whichever is Less | R _{ins} ≥ 10GΩ or R _{ins} × C ≥ 100s Whichever is Less |
| Dielectric Withstanding Voltage | At 2.5U _r (for U _r ≤ 100V) 1.5U _r + 100V (for U _r > 100V) | No Breakdown | | |

ENVIRONMENTED CHARACTERISTICS

| IEC 384-10 | TEST ITEMS | CONDITIONS | REQUIREMENT | | |
|---------------|------------------------------|--|--|---|---|
| | | | NPO | X7R | Y5V |
| 4.9 | Bending | Bending Rate 1mm/s, jig Radius 340mm | ΔC/C ≤ 1% | ΔC/C ≤ 10% | ΔC/C ≤ 20% |
| 4.10 | Resistance to Soldering Heat | 260±5°C for 10±0.5s in Static Soldering Bath | ΔC/C ≤ 0.5% or 0.5pF Whichever is Greater | -5% ≤ ΔC/C ≤ 10% | -10% ≤ ΔC/C ≤ 20% |
| 4.11 | Solderability | 235±5°C for 2±0.5s in a Static Soldering Bath | 75% Minimum Coverage of Metallic Area | | |
| 4.12 | Rapid Change of Temperature | NPO/X7R: -55°C to +125°C, 5Cycles Y5V: -25°C to +85°C, 5Cycles | ΔC/C ≤ 1% or 1pF Whichever is Greater | ΔC/C ≤ 15% | ΔC/C ≤ 20% |
| 4.14 | Damp Heat, Steady State | At 40°C, 90 to 95% R.H. and U _r Applied (Max. 500V, No Voltage for U _r ≥ 1000V) for 56 Days (500 Hours for Y5V) | ΔC/C ≤ 2% or 1pF Whichever is Greater Tanδ : ≤ 2 × Specified Value IR : 2500MΩ or R _x C ≥ 25s Whichever is Less | ΔC/C ≤ 15% Tanδ : ≤ 5%, 7% IR : 1000MΩ or R _x C ≥ 25s Whichever is Less | ΔC/C ≤ 30% Tanδ : ≤ 7%, 12.5%, 15% IR : 1000MΩ or R _x C ≥ 25s Whichever is Less |
| 4.15 | Endurance | At Upper Category Temperature, 2 × U _r Applied (1.5U _r for U _r > 50V, 1.2 × U _r for U _r ≥ 1000V) Applied for 1000 Hours | ΔC/C ≤ 2% or 1pF Whichever is Greater Tanδ : ≤ 2 × Specified Value IR : 4000MΩ or R _x C ≥ 40s Whichever is Less | ΔC/C ≤ 20% Tanδ : ≤ 5%, 7% IR : 2000MΩ or R _x C ≥ 50s Whichever is Less | ΔC/C ≤ 30% Tanδ : ≤ 7%, 12.5%, 15% IR : 2000MΩ or R _x C ≥ 50s Whichever is Less |

CAPACITANCE-TEMPERATURE CHARACTERISTICS



SPECIFICATION & PACKING

Tape Width : 8mm

NP0

| | | 16V | |
|----------|------------|------------|--------|
| CAP. | CODE 15~17 | CC0402 | CC0603 |
| (pF) 270 | 271 | 0.5 ± 0.05 | |
| 330 | 331 | | |
| 390 | 391 | | |
| 470 | 471 | | |
| 560 | 561 | | |
| 680 | 681 | | |
| 820 | 821 | | |
| 1000 | 102 | | |
| 1200 | 122 | | |
| 1500 | 152 | | |
| 1800 | 182 | 0.8 ± 0.07 | |
| 2200 | 222 | | |
| 2700 | 272 | | |
| 3300 | 332 | | |
| | | | |

In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | |
|---------------------------|----------------------------------|-------|------------------------|--------|
| | 180mm/7" | | 330mm/13" | |
| | Paper | Paper | Quantity Per Bulk Case | |
| | | | CC0402 | CC0603 |
| 0.5±0.05 | 10000 | 50000 | 50000 | - |
| 0.8±0.07 | 4000 | 15000 | | 15000 |

SPECIFICATION & PACKING

Tape Width : 8mm

| NP0 | | 25V | | | | |
|----------|------------|---------------------------------|--------|------------|------------|------------|
| CAP. | CODE 15~17 | CC0402 | CC0603 | CC0805 | CC1206 | CC1210 |
| (pF) 270 | 271 | 0.5 ± 0.05 | | | | |
| 330 | 331 | | | | | |
| 390 | 391 | In Columns : Thickness Class | | | | |
| 470 | 471 | | | | | |
| 560 | 561 | | | | | |
| 680 | 681 | | | | | |
| 820 | 821 | | | 0.8 ± 0.07 | | |
| 1000 | 102 | | | | | |
| 1200 | 122 | | | | | |
| 1500 | 152 | | | | | |
| 1800 | 182 | | | | | |
| 2200 | 222 | | | | | |
| 2700 | 272 | | | | | |
| 3300 | 332 | | | 0.85 ± 0.1 | | |
| 3900 | 392 | | | | | |
| 4700 | 472 | | | | | |
| 5600 | 562 | | | | | |
| 6800 | 682 | | | | | |
| 8200 | 822 | | | | 0.85 ± 0.1 | |
| 10000 | 103 | | | | | |
| 12000 | 123 | | | | | 0.85 ± 0.1 |
| 15000 | 153 | | | | | |
| 18000 | 183 | | | | | |
| 22000 | 223 | | | | | |

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | | | |
|------------------------|----------------------------------|---------|-----------|---------|------------------------|--------|--------|
| | 180mm/7" | | 330mm/13" | | Quantity Per Bulk Case | | |
| | Paper | Blister | Paper | Blister | CC0402 | CC0603 | CC0805 |
| 0.5±0.05 | 10000 | - | 50000 | - | 50000 | - | - |
| 0.8±0.07 | 4000 | - | 15000 | - | - | 15000 | - |
| 0.85±0.1 | 4000 | - | 15000 | - | - | - | 8000 |
| 0.5 to 1.0 | - | 4000 | - | 10000 | - | - | - |
| 0.9 to 1.3 | - | 3000 | - | 10000 | - | - | - |
| 1.25±0.1 | - | 3000 | - | 10000 | - | - | 5000 |



SPECIFICATION & PACKING

Tape Width : mm

NP0

| TAPE WIDTH | | 8 | | | | | 12 |
|------------|------------|------------|------------|-----------|-----------|--------|--------|
| | | 50V | | | | | 50V |
| CAP. | CODE 15~17 | CC0402 | CC0603 | CC0805 | CC1206 | CC1210 | CC1812 |
| (pF) 0.47 | R47 | 0.5 ± 0.05 | 0.8 ± 0.07 | 0.6 ± 0.1 | 0.6 ± 0.1 | | |
| 0.56 | R56 | | | | | | |
| 0.68 | R68 | | | | | | |
| 0.82 | R82 | | | | | | |
| 1.0 | 1R0 | | | | | | |
| 1.2 | 1R2 | | | | | | |
| 1.5 | 1R5 | | | | | | |
| 1.8 | 1R8 | | | | | | |
| 2.2 | 2R2 | | | | | | |
| 2.7 | 2R7 | | | | | | |
| 3.3 | 3R3 | | | | | | |
| 3.9 | 3R9 | | | | | | |
| 4.7 | 4R7 | | | | | | |
| 5.6 | 5R6 | | | | | | |
| 6.8 | 6R8 | | | | | | |
| 8.2 | 8R2 | | | | | | |
| 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 | | | | | | |

In Columns :
Thickness Class

SPECIFICATION & PACKING

Tape Width : mm

| NP0 | | 8 | | | | | | 12 |
|------------|------------|--------|------------|------------|------------|------------|------------|-----|
| TAPE WIDTH | | 50V | | | | | | 50V |
| CAP. | CODE 15~17 | CC0402 | CC0603 | CC0805 | CC1206 | CC1210 | CC1812 | |
| (pF) 560 | 561 | | 0.5 ± 0.05 | 0.8 ± 0.07 | 0.8 ± 0.07 | | | |
| 680 | 681 | | | | | | | |
| 820 | 821 | | | | | | | |
| 1000 | 102 | | | | | 0.5 ± 0.10 | | |
| 1200 | 122 | | | 0.85 ± 0.1 | | | | |
| 1500 | 152 | | | | | | | |
| 1800 | 182 | | | | | | | |
| 2200 | 222 | | | 1.25 ± 0.1 | | | 0.5 ± 0.10 | |
| 2700 | 272 | | | | | | | |
| 3300 | 332 | | | | | | | |
| 3900 | 392 | | | | | | | |
| 4700 | 472 | | | | | | | |
| 5600 | 562 | | | | | | | |
| 6800 | 682 | | | | | | | |
| 8200 | 822 | | | | | | | |
| 10000 | 103 | | | | | | | |
| 12000 | 123 | | | | | | | |
| 15000 | 153 | | | | | | | |
| 18000 | 183 | | | | | | | |
| 22000 | 223 | | | | | | | |

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | 12mm Tape Width Quantity Per Reel | | | |
|---------------------------|----------------------------------|---------|-----------|---------|--------------------------------------|------------------------|--------|--------|
| | 180mm/7" | | 330mm/13" | | 180mm/7" | Quantity Per Bulk Case | | |
| | Paper | Blister | Paper | Blister | Blister | CC0402 | CC0603 | CC0805 |
| 0.5±0.05 | 10000 | -- | 50000 | -- | -- | 50000 | -- | -- |
| 0.6±0.1 | 4000 | -- | 20000 | -- | -- | -- | -- | 10000 |
| 0.8±0.07 | 4000 | -- | 15000 | -- | -- | -- | 15000 | -- |
| 0.85±0.1 | 4000 | -- | 15000 | -- | -- | -- | -- | 8000 |
| 0.5 to 1.0 | -- | 4000 | -- | 10000 | 2000 | -- | -- | -- |
| 0.9 to 1.3 | -- | 3000 | -- | 10000 | 1500 | -- | -- | -- |
| 1.15±0.1 | -- | 3000 | -- | 10000 | -- | -- | -- | -- |
| 1.25±0.1 | -- | 3000 | -- | 10000 | -- | -- | -- | 5000 |

SPECIFICATION & PACKING

Tape Width : mm

| NP0 | | 8 | | | | 12 | |
|------------|------------|------------|-----------|-----------|-------------|-------------|--|
| TAPE WIDTH | | 100V | | | | 100V | |
| CAP. | CODE 15-17 | CC0603 | CC0805 | CC1206 | CC1210 | CC1812 | |
| (pF) 10 | 100 | 0.8 ± 0.07 | 0.6 ± 0.1 | 0.6 ± 0.1 | | | |
| 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 | 0.85 ± 0.1 | | | | | |
| 680 | 681 | | | | | | |
| 820 | 821 | | | | | | |
| 1000 | 102 | | | | | | |
| 1200 | 122 | | | | | | |
| 1500 | 152 | | | | | | |
| 1800 | 182 | | | | | | |
| 2200 | 222 | | | | | | |
| 2700 | 272 | | | | | | |
| 3300 | 332 | | | | | | |
| 3900 | 392 | 1.25 ± 0.1 | | | | | |
| 4700 | 472 | | | | | | |
| 5600 | 562 | | | | | | |
| 6800 | 682 | | | | | | |
| 8200 | 822 | 0.85 ± 0.1 | | | | | |
| 10000 | 103 | | | | | | |
| 12000 | 123 | | | | | | |
| 15000 | 153 | | | | | | |
| 18000 | 183 | 1.15 ± 0.1 | | | | | |
| 22000 | 223 | | | | | | |
| | | | | | 0.5 to 0.10 | | |
| | | | | | | 0.5 to 0.10 | |
| | | | | | | 0.9 to 0.13 | |

In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | 12mm Tape Width Quantity Per Reel | | |
|---------------------------|----------------------------------|---------|-----------|---------|--------------------------------------|------------------------|--------|
| | 180mm/7" | | 330mm/13" | | 180mm/7" | Quantity Per Bulk Case | |
| | Paper | Blister | Paper | Blister | Blister | CC0603 | CC0805 |
| 0.6 ± 0.1 | 4000 | -- | 20000 | -- | -- | -- | 10000 |
| 0.8 ± 0.07 | 4000 | -- | 15000 | -- | -- | 15000 | -- |
| 0.85 ± 0.1 | 4000 | -- | 15000 | -- | -- | -- | 8000 |
| 0.5 to 1.0 | -- | 4000 | -- | 10000 | 2000 | -- | -- |
| 0.9 to 1.3 | -- | 3000 | -- | 10000 | 1500 | -- | -- |
| 1.15 ± 0.1 | -- | 3000 | -- | 10000 | -- | -- | -- |
| 1.25 ± 0.1 | -- | 3000 | -- | 10000 | -- | -- | 5000 |

SPECIFICATION & PACKING

Tape Width : mm

| NP0 | | 8 | | | 12 | | 8 | | 12 |
|-------------------|-------------------|---------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| TAPE WIDTH | | 200V | | | 200V | | 500V | | 500V |
| CAP. | CODE 15~17 | CC0805 | CC1206 | CC1210 | CC1812 | CC1206 | CC1210 | CC1812 | |
| 10 | 100 | 0.6 ± 0.1 | 0.6 ± 0.1 | | | 0.6 ± 0.1 | | | |
| 12 | 120 | In Columns : Thickness Class | | | | | | | |
| 15 | 150 | | | | | | | | |
| 18 | 180 | | | | | | | | |
| 22 | 220 | | | | | | | | |
| 27 | 270 | | | | | | | | |
| 33 | 330 | | | | | | | | |
| 39 | 390 | | | | | | | | |
| 47 | 470 | | | | | | | | |
| 56 | 560 | | | | | | | | |
| 68 | 680 | | | | | | | | |
| 82 | 820 | | | | | | | | |
| 100 | 101 | 0.85 ± 0.1 | 0.85 ± 0.1 | | | 0.85 ± 0.1 | | | |
| 120 | 121 | | | | | | | | |
| 150 | 151 | | | | | | | | |
| 180 | 181 | | | | | | | | |
| 220 | 221 | | | | | | | | |
| 270 | 271 | | | | | | | | |
| 330 | 331 | | | | | | | | |
| 390 | 391 | | | | | | | | |
| 470 | 471 | | | | | | | | |
| 560 | 561 | | | | | | | | |
| 680 | 681 | | | | | | | | |
| 820 | 821 | 1.25 ± 0.1 | | | | 1.15 ± 0.1 | | | |
| 1000 | 102 | | | | | | | | |
| 1200 | 122 | | | | | | | | |
| 1500 | 152 | | 1.15 ± 0.1 | | | | | | |
| 1800 | 182 | | | 0.8 to 1.0 | | | | | |
| 2200 | 222 | | | 0.9 to 1.3 | | | | | |
| 2700 | 272 | | | | | | | | |
| 3300 | 332 | | | | | | | | |
| 3900 | 392 | | | | | | | | |
| 4700 | 472 | | | | | | | | |
| 5600 | 562 | | | | | | | 0.8 to 1.0 | |
| | | | | | | | | 0.9 to 1.3 | |
| | | | | | | | | | 0.9 to 1.3 |

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | 12mm Tape Width Quantity Per Reel | | Quantity Per Bulk Case CC0805 |
|-------------------------------|---|----------------|------------------|----------------|--|---|--|
| | 180mm/7" | | 330mm/13" | | 180mm/7" | | |
| | Paper | Blister | Paper | Blister | Blister | | |
| 0.6±0.1 | 4000 | - | 20000 | - | - | - | 10000 |
| 0.85±0.07 | 4000 | - | 15000 | - | - | - | 8000 |
| 0.8 to 1.0 | - | 4000 | - | 10000 | 7000 | - | - |
| 0.9 to 1.3 | - | 3000 | - | 10000 | 1500 | - | - |
| 1.15±0.1 | - | 3000 | - | 10000 | - | - | - |
| 1.25±0.1 | - | 3000 | - | 10000 | - | - | 5000 |
| 1.2 to 1.75 | - | 2500 | - | 10000 | 1200 | - | - |

SPECIFICATION & PACKING

Tape Width : 8mm

X7R

| CAP. (pF) | CODE 15~17 | 10V | | |
|--------------|------------|--------|--------|--------|
| | | CC0603 | CC0805 | CC1206 |
| 150000 | 154 | | | |
| 220000 | 224 | | | |
| 330000 | 334 | | | |
| 470000 | 474 | | | |
| 680000 | 684 | | | |
| 1000000 | 105 | | | |
| 1500000 | 155 | | | |
| 2200000 | 225 | | | |
| 3300000 | 335 | | | |
| 4700000 | 475 | | | |

In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | Quantity Per Bulk Case | |
|---------------------------|----------------------------------|---------|-----------|---------|------------------------|--------|
| | 180mm/7" | | 330mm/13" | | CC0603 | CC0805 |
| | Paper | Blister | Paper | Blister | | |
| 0.6±0.1 | 4000 | - | 20000 | - | - | 10000 |
| 0.8±0.07 | 4000 | - | 15000 | - | 15000 | - |
| 0.85±0.1 | 4000 | - | 15000 | - | - | 8000 |
| 1.15±0.1 | - | 3000 | - | 10000 | - | - |
| 1.25±0.1 | - | 3000 | - | 10000 | - | 5000 |
| 1.60±0.15 | - | 2500 | - | 7000 | - | - |

SPECIFICATION & PACKING

Tape Width : 8mm

X7R

| CAP. | CODE 15-17 | 16V | | | | 25V | | | | |
|-----------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | CC0402 | CC0603 | CC0805 | CC1206 | CC0402 | CC0603 | CC0805 | CC1206 | CC1210 |
| (pF) 3300 | 332 | | | | | | | | | |
| 4700 | 472 | | | | | | | | | |
| 6800 | 682 | | | | | | | | | |
| 10000 | 103 | | | | | | | | | |
| 15000 | 153 | | | | | | | | | |
| 22000 | 223 | | | | | | | | | |
| 33000 | 333 | | | | | | | | | |
| 47000 | 473 | | | | | | | | | |
| 68000 | 683 | | | | | | | | | |
| 100000 | 104 | | | | | | | | | |
| 150000 | 154 | | | | | | | | | |
| 220000 | 224 | | | | | | | | | |
| 330000 | 334 | | | | | | | | | |
| 470000 | 474 | | | | | | | | | |
| 680000 | 684 | | | | | | | | | |
| 1000000 | 105 | | | | | | | | | |

In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | 8mm Tape Width Quantity Per Reel | | Quantity Per Bulk Case | | |
|------------------------|----------------------------------|---------|-----------|---------|----------------------------------|--------|------------------------|--------|--|
| | 180mm/7" | | 330mm/13" | | 180mm/7" | | | | |
| | Paper | Blister | Paper | Blister | Blister | CC0402 | CC0603 | CC0805 | |
| 0.5±0.05 | 10000 | - | 50000 | - | - | 50000 | - | - | |
| 0.6±0.1 | 4000 | - | 20000 | - | - | - | - | 10000 | |
| 0.8±0.07 | 4000 | - | 15000 | - | - | - | 15000 | - | |
| 0.85±0.1 | 4000 | - | 15000 | - | - | - | - | 8000 | |
| 0.5 to 1.0 | - | 4000 | - | 10000 | - | - | - | - | |
| 0.9 to 1.3 | - | 3000 | - | 10000 | 1500 | - | - | - | |
| 1.15±0.1 | - | 3000 | - | 10000 | - | - | - | - | |
| 1.25±0.1 | - | 3000 | - | 10000 | - | - | - | 5000 | |
| 1.2 to 1.75 | - | 2500 | - | 10000 | - | - | - | - | |

SPECIFICATION & PACKING

Tape Width : mm

X7R

| TAPE WIDTH | | 8 | | | | | 12 | | 8 | | 12 | |
|------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| | | 50V | | | | | 50V | | 100V | | 100V | |
| CAP. | CODE 15~17 | CC0402 | CC0603 | CC0805 | CC1206 | CC1210 | CC1812 | CC0805 | CC1206 | CC1210 | CC1812 | |
| (pF) 100 | 101 | | | | | | | | | | | |
| 150 | 151 | | | | | | | | | | | |
| 220 | 221 | | | | | | | | | | | |
| 330 | 331 | | | | | | | | | | | |
| 470 | 471 | | | | | | | | | | | |
| 680 | 681 | | | | | | | | | | | |
| 1000 | 102 | | | | | | | | | | | |
| 1500 | 152 | | | | | | | | | | | |
| 2200 | 222 | | | | | | | | | | | |
| 3300 | 332 | | | | | | | | | | | |
| 4700 | 472 | | | | | | | | | | | |
| 6800 | 682 | | | | | | | | | | | |
| 10000 | 103 | | | | | | | | | | | |
| 15000 | 153 | | | | | | | | | | | |
| 22000 | 223 | | | | | | | | | | | |
| 33000 | 333 | | | | | | | | | | | |
| 47000 | 473 | | | | | | | | | | | |
| 68000 | 683 | | | | | | | | | | | |
| 100000 | 104 | | | | | | | | | | | |
| 150000 | 154 | | | | | | | | | | | |
| 220000 | 224 | | | | | | | | | | | |
| 330000 | 334 | | | | | | | | | | | |
| 470000 | 474 | | | | | | | | | | | |
| 680000 | 684 | | | | | | | | | | | |
| 1000000 | 105 | | | | | | | | | | | |

In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | 8mm Tape Width Quantity Per Reel | | | |
|------------------------|----------------------------------|---------|-----------|---------|----------------------------------|--------|------------------------|--------|
| | 180mm/7" | | 330mm/13" | | 180mm/7" | | Quantity Per Bulk Case | |
| | Paper | Blister | Paper | Blister | Blister | CC0402 | CC0603 | CC0805 |
| 0.5±0.05 | 10000 | -- | 50000 | -- | -- | 50000 | -- | -- |
| 0.6±0.1 | 4000 | -- | 20000 | -- | -- | -- | -- | 10000 |
| 0.8±0.07 | 4000 | -- | 15000 | -- | -- | -- | 15000 | -- |
| 0.85±0.1 | 4000 | -- | 15000 | -- | -- | -- | -- | 8000 |
| 0.5 to 1.0 | -- | 4000 | -- | 10000 | -- | -- | -- | -- |
| 0.9 to 1.3 | -- | 3000 | -- | 10000 | 1500 | -- | -- | -- |
| 1.15±0.1 | -- | 3000 | -- | 10000 | -- | -- | -- | -- |
| 1.25±0.1 | -- | 3000 | -- | 10000 | -- | -- | -- | 5000 |
| 1.2 to 1.75 | -- | 2500 | -- | 10000 | -- | -- | -- | -- |

SPECIFICATION & PACKING

Tape Width : mm

X7R

| TAPE WIDTH | | 8 | | | 12 | | 8 | | 12 |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | | 200V | | | 200V | | 500V | | 500V |
| CAP. | CODE 15~17 | CC0805 | CC1206 | CC1210 | CC1812 | CC1206 | CC1210 | CC1812 | |
| (pF) 220 | 221 | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] |
| 330 | 331 | | | | | | | | |
| 470 | 471 | | | | | | | | |
| 680 | 681 | | | | | | | | |
| 1000 | 102 | | | | | | | | |
| 1500 | 152 | | | | | | | | |
| 2200 | 222 | | | | | | | | |
| 3300 | 332 | | | | | | | | |
| 4700 | 472 | | | | | | | | |
| 6800 | 682 | | | | | | | | |
| 10000 | 103 | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] | [Redacted] |
| 15000 | 153 | | | | | | | | |
| 22000 | 223 | | | | | | | | |
| 33000 | 333 | | | | | | | | |
| 47000 | 473 | | | | | | | | |
| 68000 | 683 | | | | | | | | |
| 100000 | 104 | | | | | | | | |

In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | 12mm Tape Width Quantity Per Reel | | Quantity Per Bulk Case CC0805 |
|------------------------|----------------------------------|---------|-----------|---------|-----------------------------------|---|----------------------------------|
| | 180mm/7" | | 330mm/13" | | 180mm/7" | | |
| | Paper | Blister | Paper | Blister | Blister | | |
| 0.85±0.1 | 4000 | - | 15000 | - | - | - | 8000 |
| 0.9 to 1.3 | - | 3000 | - | 10000 | 15000 | - | - |
| 1.15±0.1 | - | 3000 | - | 10000 | - | - | - |
| 1.25±0.1 | - | 3000 | - | 10000 | - | - | 5000 |
| 1.2 to 1.75 | - | 2500 | - | 10000 | - | - | - |

SPECIFICATION & PACKING

Tape Width : 8mm

Y5V

| | | 10V | | |
|----------|------------|---------------------------------|------------|------------|
| CAP. | CODE 15~17 | CC0603 | CC0805 | CC1206 |
| (µF) 1.0 | 105 | [Redacted] | [Redacted] | [Redacted] |
| 2.2 | 225 | In Columns : Thickness Class | [Redacted] | [Redacted] |
| 4.7 | 475 | | [Redacted] | [Redacted] |
| 10 | 106 | | [Redacted] | [Redacted] |

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | Quantity Per Bulk Case | |
|------------------------|----------------------------------|---------|-----------|---------|------------------------|--------|
| | 180mm/7" | | 330mm/13" | | CC0603 | CC0805 |
| | Paper | Blister | Paper | Blister | | |
| 0.8±0.07 | 4000 | - | 15000 | - | 15000 | - |
| 0.85±0.1 | - | 3000 | - | 10000 | - | 5000 |
| 1.6±0.15 | - | 2500 | - | 7000 | - | - |



SPECIFICATION & PACKING

Tape Width : 8mm

YSV

| CAP. (pF) | CODE 15~17 | 16V | | | | 25V | | |
|--------------|------------|--------|--------|--------|--------|--------|--------|--------|
| | | CC0402 | CC0603 | CC0805 | CC1206 | CC0603 | CC0805 | CC1206 |
| 10000 | 103 | | | | | | | |
| 22000 | 223 | | | | | | | |
| 47000 | 473 | | | | | | | |
| 100000 | 104 | | | | | | | |
| 220000 | 224 | | | | | | | |
| 470000 | 474 | | | | | | | |
| 1000000 | 105 | | | | | | | |
| 2200000 | 225 | | | | | | | |
| 4700000 | 475 | | | | | | | |

In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | | | Quantity Per Bulk Case | | |
|---------------------------|----------------------------------|---------|-----------|---------|--------|--------|------------------------|--|--|
| | 180mm/7" | | 330mm/13" | | | | | | |
| | Paper | Blister | Paper | Blister | CC0402 | CC0603 | CC0805 | | |
| 0.5 ± 0.05 | 10000 | - | 50000 | - | 50000 | - | - | | |
| 0.6 ± 0.1 | 4000 | - | 20000 | - | - | - | 10000 | | |
| 0.8 ± 0.07 | 4000 | - | 15000 | - | - | 15000 | - | | |
| 0.85 ± 0.1 | 4000 | - | 15000 | - | - | - | 8000 | | |
| 1.15 ± 0.1 | - | 3000 | - | 10000 | - | - | - | | |
| 1.25 ± 0.1 | - | 3000 | - | 10000 | - | - | 5000 | | |

SPECIFICATION & PACKING

Tape Width : 8mm

YSV

| CAP. (pF) | CODE 15~17 | 50V | | |
|--------------|------------|--------|--------|--------|
| | | CC0603 | CC0805 | CC1206 |
| 10000 | 103 | | | |
| 22000 | 223 | | | |
| 47000 | 473 | | | |
| 100000 | 104 | | | |
| 220000 | 224 | | | |
| 470000 | 474 | | | |
| 1000000 | 105 | | | |

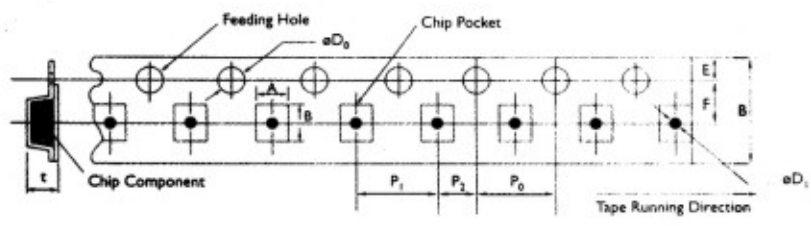
In Columns :
Thickness Class

THICKNESS CLASS AND PACKAGING QUANTITIES

| Thickness Classes (mm) | 8mm Tape Width Quantity Per Reel | | | | | | Quantity Per Bulk Case | | |
|---------------------------|----------------------------------|---------|-----------|---------|--------|--------|------------------------|--|--|
| | 180mm/7" | | 330mm/13" | | | | | | |
| | Paper | Blister | Paper | Blister | CC0402 | CC0603 | CC0805 | | |
| 0.5 ± 0.05 | 10000 | - | 50000 | - | 50000 | - | - | | |
| 0.6 ± 0.1 | 4000 | - | 20000 | - | - | - | 10000 | | |
| 0.8 ± 0.07 | 4000 | - | 15000 | - | - | 15000 | - | | |
| 0.85 ± 0.1 | 4000 | - | 15000 | - | - | - | 8000 | | |
| 1.15 ± 0.1 | - | 3000 | - | 10000 | - | - | - | | |
| 1.25 ± 0.1 | - | 3000 | - | 10000 | - | - | 5000 | | |

EMBOSSED TAPING

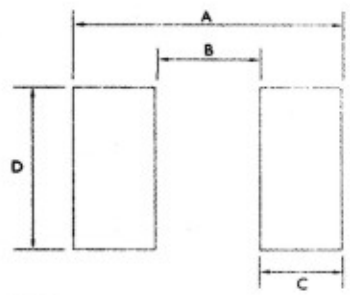
Unit : mm



| STYLE | A | B | W | E | F | P ₀ | P ₁ | P ₂ | eD ₀ | eD ₁ | T _{max} |
|-------|------------|------------|----------|----------|----------|----------------|----------------|----------------|----------------------|-----------------|------------------|
| 0805 | 1.45±0.1 | 2.2±0.1 | 8.0±0.2 | 1.75±0.1 | 3.5±0.05 | 4±0.1 | 4±0.1 | 2±0.05 | 1.5 ^{±0.05} | ≥1 | 2.0±0.1 |
| 1206 | 1.9±0.15 | 3.5±0.15 | 8.0±0.2 | 1.75±0.1 | 3.5±0.05 | 4±0.1 | 4±0.1 | 2±0.05 | 1.5 ^{±0.05} | ≥1 | 2.5±0.1 |
| 1210 | 3.0 (Max.) | 3.0 (Max.) | 8.1±0.2 | 1.75±0.1 | 3.5±0.05 | 4±0.1 | 4±0.1 | 2±0.05 | 1.5 ^{±0.05} | ≥1 | 3.5 (Max.) |
| 1812 | 4.0 (Max.) | 4.0 (Max.) | 12.0±0.2 | 1.75±0.1 | 5.5±0.05 | 4±0.1 | 8±0.1 | 2±0.05 | 1.5 ^{±0.05} | 1.5 | 3.5 (Max.) |

RECOMMENDED LAND PATTERN DESIGN

Unit : mm



□ Soldering Pad

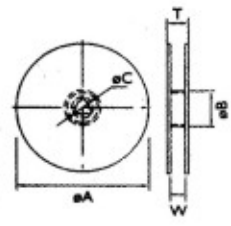
REFLOW SOLDERING

| STYLE | FOOTPRINT DIMENSION (mm) | | | | PLACEMENT |
|-------|--------------------------|-----|------|-----|---------------|
| | A | B | C | D | ACCURACY (mm) |
| 0402 | 1.5 | 0.5 | 0.5 | 0.5 | ±0.15 |
| 0603 | 2.3 | 0.5 | 0.9 | 0.9 | ±0.25 |
| 0805 | 2.8 | 0.9 | 0.95 | 1.4 | ±0.25 |
| 1206 | 4.0 | 2.0 | 1.0 | 1.8 | ±0.25 |
| 1210 | 4.0 | 2.0 | 1.0 | 2.7 | ±0.25 |
| 1808 | 5.4 | 3.3 | 1.05 | 2.3 | ±0.25 |
| 1812 | 5.4 | 3.3 | 1.05 | 3.5 | ±0.25 |

WAVE SOLDERING

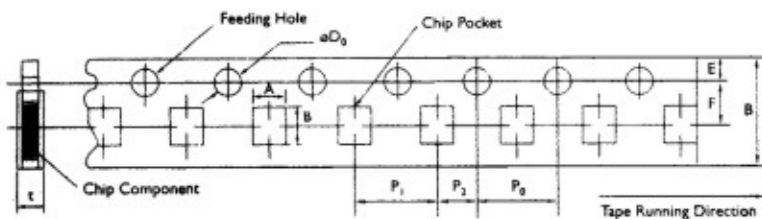
| STYLE | FOOTPRINT DIMENSION (mm) | | | | PLACEMENT |
|-------|--------------------------|-----|------|-----|---------------|
| | A | B | C | D | ACCURACY (mm) |
| 0603 | 2.7 | 0.9 | 0.9 | 0.8 | ±0.25 |
| 0805 | 3.4 | 1.3 | 1.05 | 1.3 | ±0.25 |
| 1206 | 4.8 | 2.3 | 1.25 | 1.7 | ±0.25 |
| 1210 | 5.3 | 2.3 | 1.50 | 2.6 | ±0.25 |

TAPING REEL



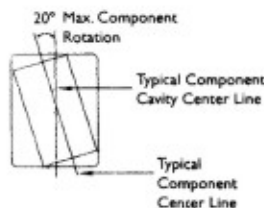
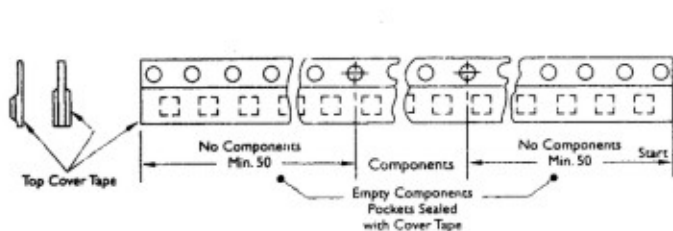
| STYLE | TAPE WIDE | eA | eB | eC | W | T _{max} |
|---------------------|-----------|-------------------|--------------------|------|----------------------|------------------|
| 0402/0603/0805/1206 | 8 | 180 ^{±1} | 60 ^{±0.5} | 20.5 | 9.0±0.3 | 11.4±1 |
| 0402/0603/0805/1206 | 8 | 330±3 | 60 ^{±0.5} | 20.5 | 9.0±0.3 | 11.4±1 |
| 1812 | 12 | 180 | 62±1.5 | 20.5 | 12.4 ^{±0.5} | 18.4 (Max.) |

TAPING REEL



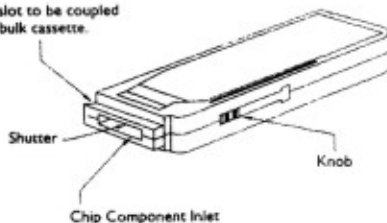
| STYLE | A | B | W | E | F | P ₀ | P ₁ | P ₂ | øD ₀ | T _{max} |
|-------|-----------|-----------|---------|----------|----------|----------------|----------------|----------------|----------------------------------|------------------|
| 0402 | 0.62±0.05 | 1.12±0.05 | 8.0±0.2 | 1.75±0.1 | 3.5±0.05 | 4±0.05 | 2±0.05 | 2±0.05 | 1.5 ^{+0.1} ₀ | 0.6±0.05 |
| 0603 | 1.10±0.1 | 1.9±0.1 | 8.0±0.2 | 1.75±0.1 | 3.5±0.05 | 4±0.1 | 4±0.1 | 2±0.05 | 1.5 ^{+0.1} ₀ | 1.0±0.05 |
| 0805 | 1.65±0.1 | 2.4±0.1 | 8.0±0.2 | 1.75±0.1 | 3.5±0.05 | 4±0.1 | 4±0.1 | 2±0.05 | 1.5 ^{+0.1} ₀ | 1.0±0.05 |
| 1206 | 2.0±0.1 | 3.5±0.1 | 8.0±0.2 | 1.75±0.1 | 3.5±0.05 | 4±0.1 | 4±0.1 | 2±0.05 | 1.5 ^{+0.1} ₀ | 1.0±0.05 |

TAPING REEL



BULK CASSETTE

This slot to be coupled with bulk cassette.

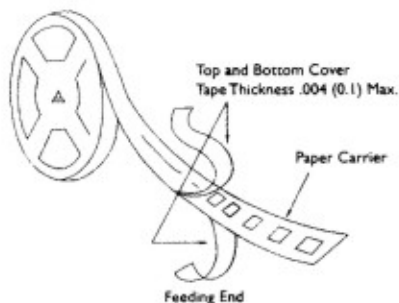


Dimension of Bulk Case

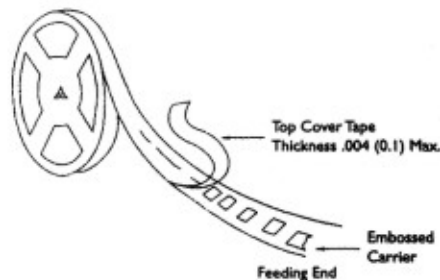
110 x 36 x 12 mm (L x W x T)

Bulk case was standardized in Mar. 1992 (EIA-7201).

PAPER CARRIER



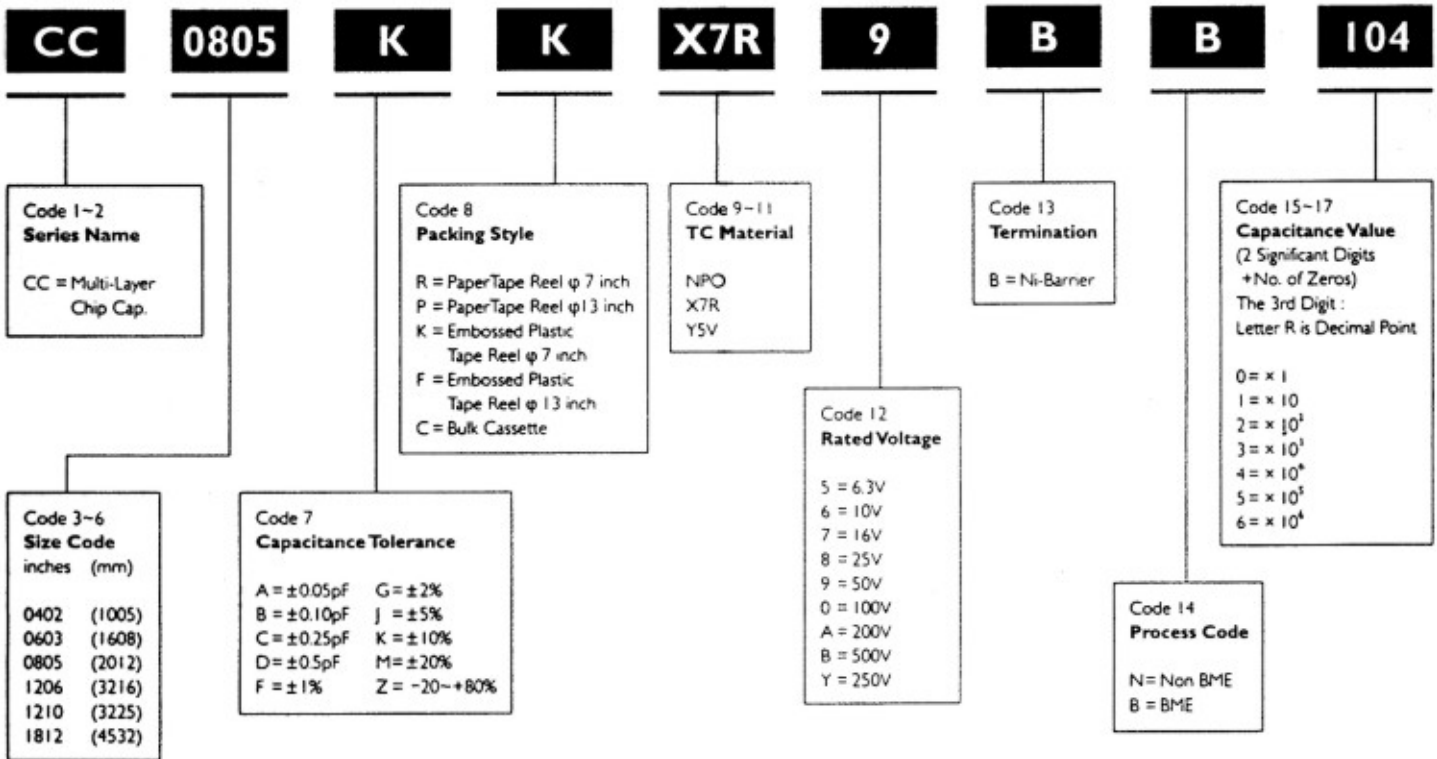
EMBOSSSED PLASTIC CARRIER



1. SUBJECT : This specification applies on the chip capacitor made by Yageo Corporation.

2. PART NUMBER : Part number of the chip capacitor is identified by the size, tolerance, packing, material and capacitor value.

Example :



STANDARD SERIES OF VALUES

| | | | | | | | | | | | | |
|-------------------|----|----|----|----|----|----|----|----|----|----|----|----|
| E6 SERIES | 10 | 15 | 22 | 33 | 47 | 68 | | | | | | |
| E12 SERIES | 10 | 12 | 15 | 18 | 22 | 27 | 33 | 39 | 47 | 56 | 68 | 82 |