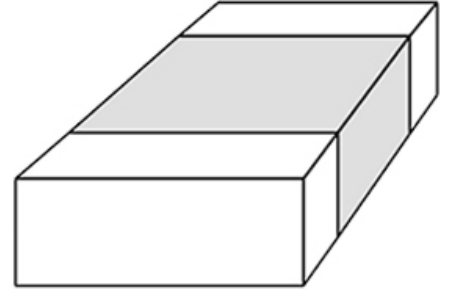


**FEATURES**

- Surface Mount
- Suitable for Reflow Soldering
- Excellent Frequency Characteristics
- RoHS Compliant
- Available with Flexible Termination

**APPLICATIONS**

- Telecommunications
- Industrial
- Lighting/LED
- Automation
- Meters/Controls
- Audio



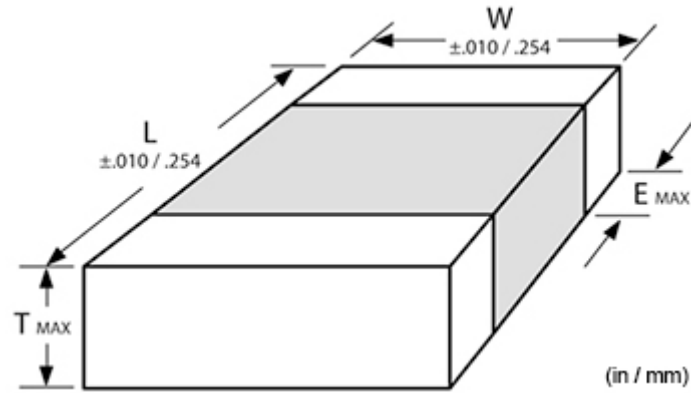
**PART NUMBER EXAMPLE**

CMC	-	050	/	104	K	X	0805	T	F	F
Type		Rated voltage		Capacitance code (pF)	Tolerance code	Dielectric material	Case size	Package code	Option	RoHS compliant
Capacitance Code: First two digits represent significant figures, third digit represents multiplier (number of zeros).										
Rated Voltage: 4R0 = 4V; 6R3 = 6.3V; 010 = 10V; 016 = 16V; 025 = 25V; 035 = 35V; 050 = 50V; 100 = 100V; 200 = 200V										
Dielectric Material: N = NP0, X5 = X5R, X = X7R, Y = Y5V										
Package Code: T = 7" Tape & Reel, T13 = 13" Tape & Reel, W = Waffle.										
Option: Blank=Standard, F=Flex term.										

**GENERAL SPECIFICATIONS**

Item	Performance
Operating temperature	NP0: -55°C to +125°C X5R: -55°C to +85°C X7R: -55°C to +125°C Y5V: -30°C to +85°C
Capacitance range	0.5pF to 330μF
Capacitance tolerance	NP0: C<10pf - ±0.5pF (D), ±0.25pF (C), ±0.1pF (B), C≥10pf - ±1% (F), ±2% (G), ±5% (J), ±10% (K) X5R: ±10% (K), ±20% (M) X7R: ±5% (J), ±10% (K), ±20% (M) Y5V: +80/-20% (Z)
Rated voltage range	4 VDC to 200 VDC
Temperature coefficient	NP0: 0ppm/°C ± 30ppm/°C from -55°C ~ +125°C X5R: ±15% Δ°C maximum from -55°C ~ +85°C X7R: ±15% Δ°C maximum from -55°C ~ +125°C Y5V: +22% ~ 82% Δ°C maximum from -30°C ~ +85°C
Withstanding voltage (between leads)	2.5 times rated voltage, 50mA maximum for 1 second
Minimum insulation resistance	10G Ω or 500meg Ω x Farads, whichever is less, measured @ rated voltage.
Dissipation factor	NP0: 0.1% Maximum X5R: 5% @ 0.5Vrms (Values > 10μf) X7R: 2.5% @ 1.0Vrms, except 16 & 25 VDC 3.5% @ 16 & 25 VDC Y5V: 5%
Testing Conditions	NP0: 1MHz ± 50Hz @ 1.0 Vrms ± 0.20 Vrms (Values ≤ 100pF) 1KHz ± 50Hz @ 1.0 Vrms ±0.20 Vrms (Values > 100pF)  X5R: 1KHz ± 50Hz @ 1.0 Vrms ± 0.20 Vrms (Values ≤ 10μF) 120Hz ± 50Hz @ 0.5 Vrms ±0.20 Vrms (Values > 10μF)  X7R: 1KHz ± 50Hz @ 1.0 Vrms ± 0.20 Vrms (Values ≤ 10μF) 120Hz ± 50Hz @ 0.5 Vrms ±0.20 Vrms (Values > 10μF)  Y5V: 1KHz ± 50Hz @ 1.0 Vrms ± 0.20 Vrms (Values ≤ 10μF) 120Hz ± 50Hz @ 0.5 Vrms ±0.20 Vrms (Values > 10μF)

**DIMENSIONS**



**SIZE mm (in)**

Size	Length	Width	Thickness	Endband
0201	0.61 (0.024)	0.31 (0.012)	0.36 (0.014)	0.15 (0.006)
0402	1.02 (0.040)	0.51 (0.020)	0.56 (0.022)	0.25 (0.010)
0603	1.60 (0.063)	0.81 (0.032)	0.94 (0.037)	0.41 (0.016)
0805	2.01 (0.079)	1.25 (0.049)	1.45 (0.057)	0.71 (0.028)
1206	3.20 (0.126)	1.60 (0.063)	1.80 (0.071)	1.50 (0.059)
1210	3.20 (0.126)	2.49 (0.098)	2.79 (0.110)	1.50 (0.059)
1812	4.60 (0.181)	3.20 (0.126)	3.20 (0.126)	0.31 (0.012)
1825	4.60 (0.181)	6.35 (0.250)	3.20 (0.126)	0.31 (0.012)
2220	5.59 (0.220)	5.00 (0.197)	3.20 (0.126)	0.31 (0.012)
2225	5.59 (0.220)	6.35 (0.250)	3.20 (0.126)	0.31 (0.012)

**MINIMUM/MAXIMUM CAPACITANCE VS. SIZE**

TC	VDC	Size									
		0201	0402	0603	0805	1206	1210	1812	1825	2220	2225
NP0	16		1,000pF to 2,200pF	100pF to 0.015μF	120pF to 0.047μF						
NP0	25	0.5pF to 220pF	0.5pF to 2,200pF	120pF to 0.01μF	120pF to 0.047μF	120pF to 0.1μF	2,200pF to 0.22μF	0.12μF to 0.22μF			
NP0	50	10pF to 220pF	0.5pF to 1,500pF	0.5pF to 0.01μF	0.5pF to 0.033μF	0.5pF to 0.1μF	12pF to 0.15μF	1,000pF to 0.22μF	0.01μF to 0.047μF	0.01μF to 0.47μF	0.01μF to 0.15μF
NP0	100		0.5pF to 1,000pF	0.5pF to 0.01μF	0.5pF to 0.033μF	0.5pF to 0.1μF	27pF to 0.1μF	1,000pF to 0.15μF	0.01μF to 0.033μF	0.01μF to 0.33μF	0.01μF to 0.068μF
NP0	200			2pF to 680pF	1pF to 3,900pF	2pF to 0.01μF	100pF to 5,600pF	150pF to 0.1μF	0.01μF to 0.1μF	0.01μF to 0.047μF	0.01μF to 0.056μF
X5R	4	0.01μF to 1μF	0.47μF to 10μF	2.2μF to 22μF	47μF to 100μF	47μF to 220μF	22μF to 330μF				
X5R	6.3	4,700pF to 1μF	0.015μF to 10μF	0.82μF to 22μF	1μF to 47μF	2.2μF to 100μF	10μF to 220μF	33μF to 100μF		100μF to 100μF	
X5R	10	1,000pF to 1μF	0.01μF to 10μF	0.22μF to 22μF	0.22μF to 47μF	1μF to 100μF	3.3μF to 100μF	22μF to 100μF		68μF to 100μF	
X5R	16	100pF to 0.22μF	0.01μF to 2.2μF	0.068μF to 10μF	0.33μF to 22μF	1μF to 47μF	2.2μF to 100μF	22μF to 33μF		33μF to 47μF	
X5R	25	100pF to 0.22μF	0.01μF to 2.2μF	0.033μF to 10μF	0.22μF to 22μF	1μF to 33μF	1μF to 47μF	10μF to 22μF		22μF to 22μF	
X5R	35		0.068μF to 2.2μF	0.015μF to 4.7μF	0.47μF to 22μF	1μF to 22μF	1μF to 10μF				
X5R	50	100pF to 0.01μF	0.01μF to 0.47μF	0.047μF to 2.2μF	0.22μF to 4.7μF	1μF to 10μF	1μF to 10μF			10μF to 10μF	
X7R	6.3	1,000pF to 0.01μF	0.01μF to 1μF	0.033μF to 10μF	1μF to 10μF	2.2μF to 22μF	4.7μF to 47μF				
X7R	10	100pF to 0.01μF	0.01μF to 0.47μF	0.1μF to 2.2μF	0.22μF to 10μF	1μF to 22μF	2.2μF to 47μF	22μF to 22μF			
X7R	16	100pF to 0.01μF	1,000pF to 0.22μF	0.01μF to 2.2μF	0.1μF to 10μF	0.47μF to 22μF	0.47μF to 22μF	10μF to 33μF		22μF to 47μF	
X7R	25	100pF to 0.01μF	100pF to 0.22μF	100pF to 1μF	1,000pF to 4.7μF	0.1μF to 10μF	0.1μF to 22μF	3.3μF to 22μF		10μF to 33μF	
X7R	35					1μF to 10μF	10μF to 10μF				
X7R	50	100pF to 1,500pF	100pF to 0.1μF	100pF to 1μF	100pF to 2.2μF	1,000pF to 4.7μF	1,000pF to 10μF	0.1μF to 6.8μF	0.33μF to 2.2μF	0.33μF to 15μF	0.33μF to 4.7μF
X7R	100		220pF to 4,700pF	100pF to 0.1μF	100pF to 0.47μF	1,000pF to 2.2μF	1,000pF to 2.2μF	0.01μF to 2.2μF	0.1μF to 10μF	0.1μF to 10μF	0.1μF to 10μF
X7R	200			100pF to 0.01μF	100pF to 0.056μF	1,000pF to 0.22μF	1,000pF to 0.68μF	0.01μF to 1μF	0.01μF to 3.3μF	0.01μF to 3.3μF	0.01μF to 4.7μF
Y5V	4	0.1μF to 0.1μF									
Y5V	6.3	0.01μF to 0.1μF	0.01μF to 1μF	0.47μF to 10μF	1μF to 22μF	10μF to 100μF	22μF to 100μF	100μF to 100μF			
Y5V	10	2,200pF to 0.01μF	0.022μF to 1μF	0.15μF to 4.7μF	0.68μF to 10μF	1μF to 22μF	1.5μF to 47μF	47μF to 100μF		100μF to 100μF	
Y5V	16	0.01μF to 0.01μF	0.01μF to 0.47μF	0.022μF to 2.2μF	0.1μF to 10μF	0.1μF to 22μF	0.33μF to 47μF	22μF to 47μF		100μF to 100μF	
Y5V	25		0.01μF to 0.22μF	0.01μF to 1μF	0.047μF to 4.7μF	0.1μF to 10μF	0.33μF to 22μF	4.7μF to 22μF		47μF to 47μF	
Y5V	35					2.2μF to 10μF	10μF to 10μF				
Y5V	50		4,700pF to 0.022μF	1,000pF to 0.47μF	0.01μF to 2.2μF	0.1μF to 4.7μF	0.22μF to 10μF	10μF to 10μF		3.3μF to 22μF	
Y5V	100									0.47μF to 0.68μF	