

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, 500, 1k, 2k, 3k and 4kV Ratings. The Dielectric Material of CC Series Ranging from NPO to 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.

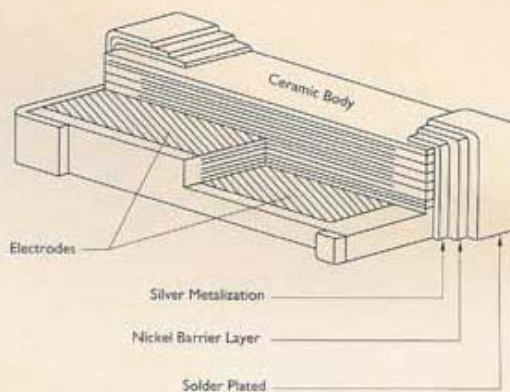
FEATURES

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±0.1	0.7	0.9	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

CAHRACTERISTICS	TEST CONDITIONS	REQUIREMENT			
		CLASS I NPO	CLASS II X7R	Y5V	Z5U
Operation Temperature Range		-55°C to 125°C	-55°C to 125°C	-25°C to 85°C	+10°C to +85°C
Temperature	With Respect to 20°C (25°C for Y5V, Z5U)	NPO 16V, 0±60ppm/K	±15%	+30% to -80%	+22% to -56%
Characteristic Coefficient (TC)	Within Operation Temperature Range	NPO > 16V, 0±30ppm/K			
Capacitance Tolerance	With Respect to 20°C (25°C for Y5V, Z5U)	In Accordance with Specification			
Dissipation Factor (Tanδ)	NPO : C < 100pF 1Vrms/1MHz C > 1000pF 1Vrms/1kHz X7R/Y5V : 1Vrms/1kHz Z5U : 0.5Vrms/1kHz	C < 10pF : Tanδ 10 (3/C+0.7) × 10 ⁻⁴ or 30 × 10 ⁻⁴ Whichever is Less C 10pF Tanδ 10 × 10 ⁻⁴	Tanδ 5%, 10V Tanδ 3.5%, 16V Tanδ 2.5%, 25V	Tanδ 12.5%, 10V Tanδ 9% or 12.5%, 16V Depending on Capacitance Value Tanδ 5% or 7%, 25V Depending on Capacitance Value	Tanδ 9%, 16V Tanδ 6%, 25V Tanδ 4%, 50V
Insulation Resistance (IR)	At Ur (Rated Voltage) for 1 Minute 500V for Ur = 500V	R _{ins} 10G or R _{ins} × C 500s Whichever is Less	R _{ins} 10G or R _{ins} × C 500s Whichever is Less	R _{ins} 10G or R _{ins} × C 100s Whichever is Less	
Dielectric Withstanding Voltage	At 2.5Ur (for Ur = 100V) 1.5Ur + 100V (for Ur > 100V) 1.5Ur, Ur = 1000V 1.2Ur, Ur > 1000V for 5 Second	No Breakdown			

ENVIRONMENTED CHARACTERISTICS

IEC 384-10	TEST ITEMS	CONDITIONS	REQUIREMENT		
			NPO	X7R	Y5V
4.9	Bending	Bending Rate 1mm/s, jig Radius 340mm	C/C 1%	C/C 10%	C/C 20%
4.10	Resistance to Soldering Heat	260±5°C for 10±0.5s in Static Soldering Bath	C/C 0.5% or 0.5pF Whichever is Greater	-5% C/C 10%	-10% C/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	C/C 1% or 1pF Whichever is Greater	C/C 15%	C/C 20%
4.14	Damp Heat, Steady State	At 40°C, 90 to 95% R.H. and Ur Applied (Max. 500V, No Voltage for Ur = 1000V) for 56 Days (500 Hours for Y5V)	C/C : 2% or 1pF Whichever is Greater Tanδ : 2 × Specified Value IR : 2500M or RxC 25s Whichever is Less	C/C 15% Tanδ : 5%, 7% IR : 1000M or RxC 25s Whichever is Less	C/C 30% Tanδ : 7%, 12.5%, 15% IR : 1000M or RxC 25s Whichever is Less
4.15	Endurance	At Upper Category Temperature, 2 × Ur Applied (1.5Ur for Ur > 50V, 1.2 × Ur for Ur = 1000V) Applied for 1000 Hours	C/C : 2% or 1pF Whichever is Greater Tanδ : 2 × Specified Value IR : 4000M or RxC 40s Whichever is Less	C/C 20% Tanδ : 5%, 7% IR : 2000M or RxC 50s Whichever is Less	C/C 30% Tanδ : 7%, 12.5%, 15% IR : 2000M or RxC 50s Whichever is Less

CAPACITANCE -TEMPERATURE CHARACTERISTICS

