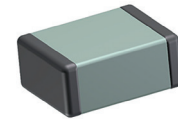


## • Applications

Negative temperature coefficient (- 120 / - 1200ppm) used in applications requiring temperature compensations such as oscillators



RoHS compliant

## • Electrical Parameters

**Electrical Characteristics** at + 25°C unless otherwise specified  
**Operating Temperature** - 55°C, + 125°C  
**Dissipation Factor** < 10.10<sup>-4</sup> at 1Vrms and 1kHz (or 1MHz)  
**Temperature Coefficient**

- N150 ± 60ppm
- N220 ± 60ppm
- N330 ± 60ppm
- N470 ± 60ppm
- N750 ± 120ppm
- N1200 ± 120ppm

**Insulation Resistance (IR)**  
 25°C/Un 10<sup>5</sup> MOhm or 1000 Ohm-Farad whichever is less  
 125°C/Un 10<sup>4</sup> MOhm or 100 Ohm-Farad whichever is less  
**Dielectric Strength Test**  
 Performed per method 103 of EIA 198-2-E  
 Applied test voltages :  
 ≤ 100Vdc-rated : 250% of rated voltage

## • Quick Reference Data

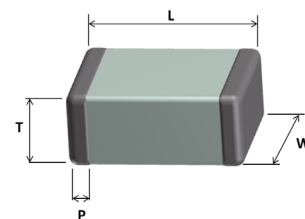
	0603	0805	1206	1210
50V	0.47pF - 470pF	1.2pF - 1nF	120pF - 2.2nF	470pF - 8.2nF
100V	0.47pF - 220pF	1.2pF - 470pF	120pF - 1nF	470pF - 2.7nF

## • Ordering Information

1210	A	502	G	A	X	B	N750
SIZE	DIELECTRIC	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	PACKAGING	TEMPERATURE COEFFICIENT
0603 0805 1206 1210	A = COG	Expressed in picofarads (pF). The first two digits are significant, the third digit give the number of noughts. Example : 102 = 1000pF	B = ± 0.1pF C = ± 0.25pF D = ± 0.5pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20%	A = 50V B = 100V	F = Palladium-Silver W = Silver with Gold plated finish X = Nickel with Tin plated finish P = Polymer with Tin plated finish C = Copper with Tin plated finish	B = 7" reel V = Bulk	N150 N220 N330 N470 N750 N1200

## • Dimensions in millimeters

Designation	0603	0805	1206	1210
Length (L)	1.60 ± 0.1	2.00 ± 0.2	3.20 ± 0.2	3.20 ± 0.2
Width (W)	0.80 ± 0.1	1.25 ± 0.2	1.60 ± 0.2	2.50 ± 0.2
Thickness (T)	0.90	1.40	1.70	1.70
Termination (P)	Min	0.25	0.25	0.25
	Max	0.40	0.70	0.70



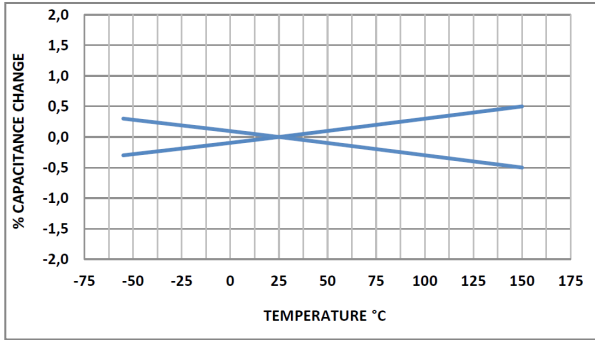
For P termination (Polymer type) add 0.20mm to all dimensions.

• Standard Sizes : 0603 to 1210

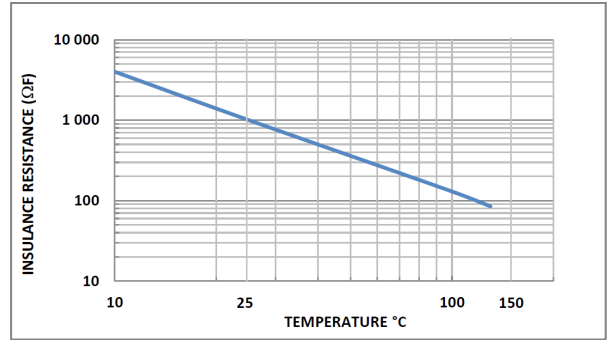
SIZE		0603		0805		1206		1210	
Voltage (Vdc)		50	100	50	100	50	100	50	100
Cap. Code	Cap.								
0R47	0.47pF								
1R0	1pF								
1R2	1.2pF								
1R5	1.5pF								
1R8	1.8pF								
2R2	2.2pF								
2R7	2.7pF								
3R3	3.3pF								
3R9	3.9pF								
4R7	4.7pF								
5R6	5.6pF								
6R8	6.8pF								
8R2	8.2pF								
100	10pF								
120	12pF								
150	15pF								
180	18pF								
220	22pF								
270	27pF								
330	33pF								
390	39pF								
470	47pF								
560	56pF								
680	68pF								
820	82pF								
101	100pF								
121	120pF								
151	150pF								
181	180pF								
221	220pF								
271	270pF								
331	330pF								
391	390pF								
471	470pF								
561	560pF								
681	680pF								
821	820pF								
102	1nF								
122	1.2nF								
152	1.5nF								
182	1.8nF								
222	2.2nF								
272	2.7nF								
332	3.3nF								
392	3.9nF								
472	4.7nF								
562	5.6nF								
682	6.8nF								
822	8.2nF								

## • Typical Characteristics

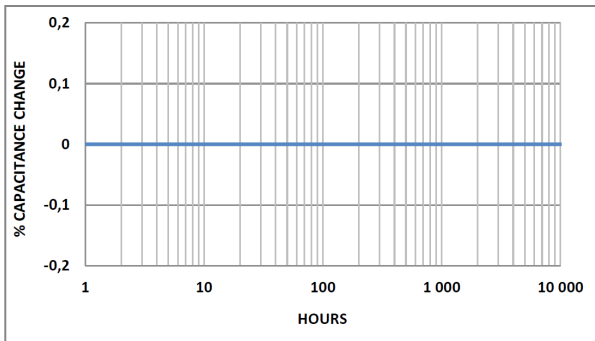
Temperature coefficient of capacitance



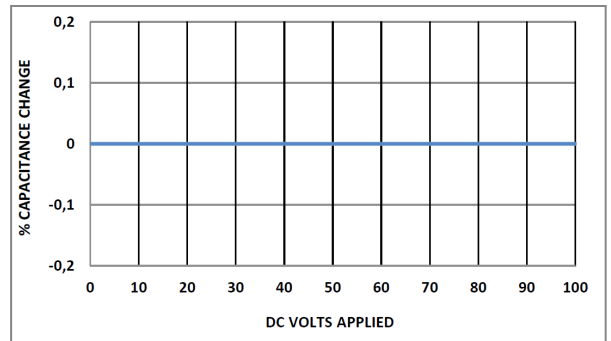
Insulation resistance vs. temperature



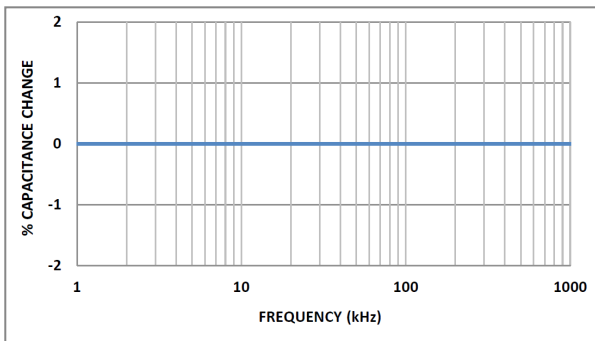
Aging rate



Voltage coefficient of capacitance



Change of Capacitance with Frequency



Dissipation factor vs. frequency

