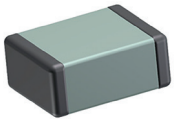
MLCC NP0 Type 1
200V - 1000V

• Applications

NP0 C0G : Ultra stable ceramic
Surge suppression
High voltage applications
Low disspation applications



RoHS compliant

• Electrical Parameters

Electrical Characteristics at + 25°C unless otherwise specified
Operating Temperature - 55°C, + 125°C
Temperature Coefficient ± 30ppm
Dissipation Factor < 10.10^{-4} at 1Vrms and 1kHz (or 1MHz)

Insulation Resistance (IR)
25°C/Un 10^5 MOhm or 1000 Ohm-Farad whichever is less
125°C/Un 10^4 MOhm or 100 Ohm-Farad whichever is less
Dielectric Strength Test
Performed per method 103 of EIA 198-2-E
Applied test voltages :
200Vdc-rated : 250% of rated voltage
500Vdc-rated : 200% of rated voltage
630Vdc, 1000Vdc-rated : 150% of rated voltage

• Quick Reference Data

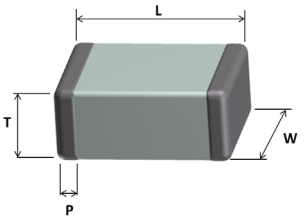
	0603	0805	1206	1210	1808	1812	1825	2220	2225	3640
200V	0.47pF - 220pF	0.47pF - 1nF	0.47pF - 3.3nF	3.3pF - 8.2nF	3.3pF - 6.8nF	8.2pF - 27nF	8.2pF - 33nF	8.2pF - 56nF	8.2pF - 68nF	8.2pF - 100nF
500V	0.47pF - 150pF	0.47pF - 680pF	0.47pF - 2.2nF	3.3pF - 6.8nF	3.3pF - 1.2nF	8.2pF - 22nF	8.2pF - 27nF	8.2pF - 39nF	8.2pF - 47nF	8.2pF - 82nF
1000V		0.47pF - 180pF	0.47pF - 1nF	3.3pF - 2.2nF	3.3pF - 2.2nF	8.2pF - 8.2nF	8.2pF - 10nF	8.2pF - 12nF	8.2pF - 15nF	8.2pF - 47nF

• Ordering Information

0805	A	220	J	A	P	B	XX
SIZE	DIELECTRIC	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	PACKAGING	SPECIAL PARAMETERS
0603 0805 1206 1210 1808 1812 1825 2220 2225 3640	A = C0G	Expressed in picofarads (pF). The first two digits are significant, the third digit give the number of noughts. Example : 102 = 1 000pF	C = ± 0.25pF D = ± 0 .5pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% Z = - 20%, + 80%	C = 200V E = 500V G = 1000V	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	

• Dimensions in millimeters

Designation		0603	0805	1206	1210	1808	1812	1825	2220	2225	3640
Length (L)		1.60 ± 0.1	2.00 ± 0.2	3.20 ± 0.2	3.20 ± 0.2	4.6 ± 0.25	4.50 ± 0.3	4.50 ± 0.3	5.70 ± 0.4	5.70 ± 0.4	9.2 ± 0.4
Width (W)		0.80 ± 0.1	1.25 ± 0.2	1.60 ± 0.2	2.50 ± 0.2	2 ± 0.25	3.20 ± 0.2	6.40 ± 0.3	5.00 ± 0.4	6.40 ± 0.4	10.2 ± 0.4
Thickness (T)		0.90	1.40	1.70	1.70	2.00	2.80	2.50	4.00	4.50	6.00
Termination (P)	Min	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.80
	Max	0.40	0.70	0.70	0.80	1.00	1.00	1.00	1.00	1.00	1.50



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

• Standard Sizes : 0603 to 1808

SIZE		0603		0805			1206			1210			1808		
Voltage (Vdc)		200	500	200	500	1000	200	500	1000	200	500	1000	200	500	1000
Cap. Code	Cap.														
0R47	0.47pF														
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														
103	10nF														
123	12nF														
153	15nF														
183	18nF														
223	22nF														
273	27nF														
333	33nF														
393	39nF														
473	47nF														
563	56nF														
683	68nF														
823	82nF														
104	100nF														
124	120nF														
154	150nF														
184	180nF														
224	220nF														

Other sizes available on request. Example : 0504, 0907, 3033.

• Standard Sizes : 1812 to 3640

SIZE		1812			1825			2220			2225			3640		
Voltage (Vdc)		200	500	1000	200	500	1000	200	500	1000	200	500	1000	200	500	1000
Cap. Code	Cap.															
0R47	0.47pF															
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															
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331	330pF															
391	390pF															
471	470pF															
561	560pF															
681	680pF															
821	820pF															
102	1nF															
122	1.2nF															
152	1.5nF															
182	1.8nF															
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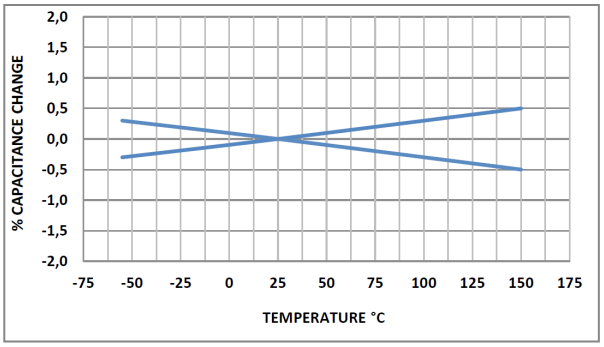
124	120nF															
154	150nF															
184	180nF															
224	220nF															

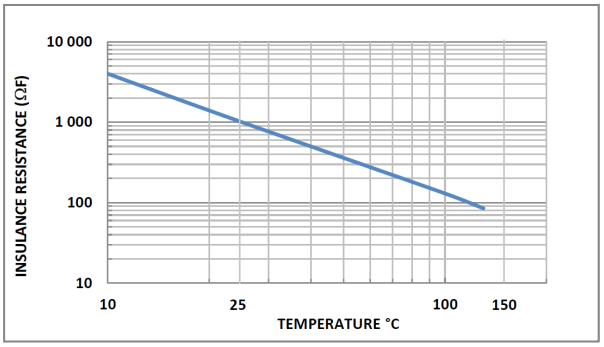
Other sizes available on request. Example : 0504, 0907, 3033.

• Typical Characteristics

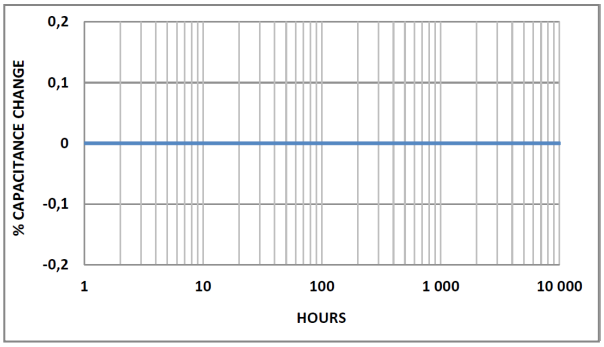
Temperature coefficient of capacitance



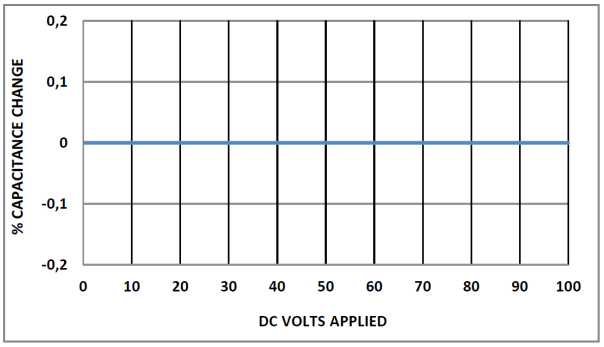
Insulation resistance vs. temperature



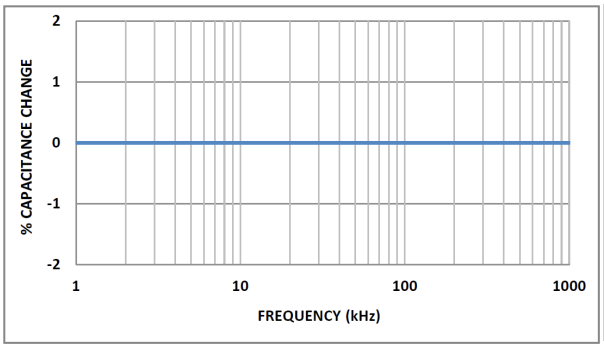
Aging rate



Voltage coefficient of capacitance



Change of Capacitance with Frequency



Dissipation factor vs. frequency