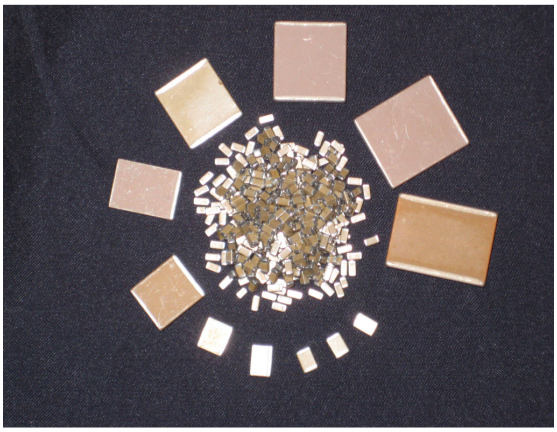
MULTILAYER CERAMIC CAPACITORS

COG / NPO Commercial – 25 Vdc to 5.0 KVdc



COG (NPO) Dielectrics are considered to be "ultra stable" ceramics that fall into the category of Class I dielectrics as defined by EIA-198. They are characterized by a near linear temperature coefficient, are non piezoelectric, exhibit low loss, no aging and negligible performance variation due to changes in working voltage and frequency.

Our proprietary dielectric material formulations achieve "best in class" dissipation factor levels, excellent volumetric efficiency and dielectric breakdown characteristics, while maintaining stable performance attributes related to variations in time, temperature, applied voltage and frequency.

Typical applications include precision timing circuits, RF oscillators and other precision circuitry requiring low loss, stable performance.

PERFORMANCE CHARACTERISTICS

Operating Temperature Range
-55 to +125℃

Temperature Coefficient
ΔC @ 0 ±30 ppm / ℃ Max, -55 to +125℃

Test Parameters
1KHz ± 100 Hz, 1.0 ± 0.2 VRMS @ +25℃
1 MHz ± 100 kHz, 1.0 ± 0.2 VRMS @ +25℃

Insulation Resistance
1000 ΩF or 100 GΩ w/e less @ wvdc & +25℃
100 ΩF or 10 GΩ w/e less @ wvdc & +125℃

Dielectric Strength
2.5 x WVDC @ WVDC ≤ 200 Vdc
1.5 x WVDC @ 201 Vdc ≤ WVDC ≤ 500 Vdc
1.2 x WVDC @ WVDC >500 Vdc

Dissipation Factor
0.005% Max @ +25℃ &
1 MHz @ C ≤ 100 pF / 1 kHz @ C > 100 pF

Voltage Coefficient
Negligible

Aging Rate
None

MECHANICAL DIMENSIONS

Chip Size	Length	Tol	Width	Tol	Thickness	End Band	Tol
	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
0805	0.080 (2.030)	± 0.008 (0.203)	0.050 (1.270)	± 0.008 (0.203)	0.055 (1.40) Max	0.020 (0.508)	± 0.010 (0.254)
1005	0.100 (2.540)	± 0.010 (0.254)	0.050 (1.270)	± 0.010 (0.254)	0.055 (1.40) Max	0.020 (0.508)	± 0.010 (0.254)
1206	0.125 (3.180)	± 0.010 (0.254)	0.060 (1.520)	± 0.010 (0.254)	0.065 (1.65) Max	0.020 (0.508)	± 0.010 (0.254)
1210	0.125 (3.180)	± 0.010 (0.254)	0.100 (2.54)	± 0.010 (0.254)	0.065 (1.65) Max	0.020 (0.508)	± 0.010 (0.254)
1515	0.150 (3.810)	± 0.015 (0.380)	0.150 (3.810)	± 0.015 (0.380)	0.140 (3.55) Max	0.030 (0.760)	± 0.015 (0.380)
1805	0.180 (4.570)	± 0.015 (0.380)	0.050 (1.270)	± 0.015 (0.380)	0.055 (1.40) Max	0.020 (0.508)	± 0.010 (0.254)
1808	0.180 (4.570)	± 0.015 (0.380)	0.080 (2.030)	± 0.015 (0.380)	0.080 (2.03) Max	0.020 (0.508)	± 0.010 (0.254)
1812	0.180 (4.570)	± 0.015 (0.380)	0.125 (3.180)	± 0.015 (0.380)	0.100 (2.54) Max	0.025 (0.640)	± 0.015 (0.380)
1825	0.180 (4.570)	± 0.015 (0.380)	0.250 (6.350)	± 0.015 (0.380)	0.140 (3.56 Max)	0.025 (0.640)	± 0.015 (0.380)
2020	0.200 (5.080)	± 0.015 (0.380)	0.200 (5.080)	± 0.015 (0.380)	0.180 (4.57) Max	0.025 (0.640)	± 0.015 (0.380)
2225	0.225 (5.720)	± 0.015 (0.380)	0.250 (6.350)	± 0.015 (0.380)	0.200 (5.08) Max	0.030 (0.762)	± 0.015 (0.380)
2520	0.250 (6.350)	± 0.015 (0.380)	0.200 (5.080)	± 0.015 (0.380)	0.180 (4.57) Max	0.030 (0.762)	± 0.015 (0.380)
3333	0.330 (8.380)	± 0.017 (0.432)	0.330 (8.380)	± 0.017 (0.432)	0.200 (5.08) Max	0.030 (0.762)	± 0.015 (0.380)
3530	0.350 (8.890)	± 0.018 (0.457)	0.300 (7.620)	± 0.015 (0.380)	0.200 (5.08) Max	0.030 (0.762)	± 0.015 (0.380)
4040	0.400 (10.16)	± 0.020 (0.510)	0.400 (10.16)	± 0.020 (0.510)	0.200 (5.08) Max	0.040 (1.020)	± 0.020 (0.510)
4540	0.450 (11.43)	± 0.023 (0.584)	0.400 (10.16)	± 0.020 (0.510)	0.200 (5.08) Max	0.040 (1.020)	± 0.020 (0.510)
5550	0.550 (14.00)	± 0.028 (0.711)	0.500 (12.70)	± 0.025 (0.635)	0.200 (5.08) Max	0.040 (1.020)	± 0.020 (0.510)
6560	0.650 (16.50)	± 0.033 (0.838)	0.600 (15.20)	± 0.030 (0.762)	0.200 (5.08) Max	0.040 (1.020)	± 0.020 (0.510)
7565	0.750 (19.10)	± 0.038 (0.965)	0.650 (16.50)	± 0.033 (0.838)	0.200 (5.08) Max	0.040 (1.020)	± 0.020 (0.510)

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MULTILAYER CERAMIC CAPACITORS

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CAPACITANCE & VOLTAGE SELECTION

Chip Size		0805	1005	1206	1210	1515	1805	1808	1812	1825	2020	2225	2520	3333	3530	4040	4540	5550	6560	7565
Min Cap		1R0	1R0	1R0	5R0	100	5R0	5R0	100	560	560	820	820	101	101	101	101	101	101	101
Working Voltage DC	25	182	182	392	822	183	332	562	183	393	333	563	473	104	104	154	184	274	394	564
	50	182	182	392	822	183	332	562	183	393	333	563	473	104	104	154	184	274	394	564
	100	182	182	392	822	183	332	562	183	393	333	563	473	104	104	154	184	274	394	564
	200	182	182	392	822	183	332	562	183	393	333	563	473	104	104	154	184	274	394	564
	250	182	182	392	822	183	332	562	183	393	333	563	473	104	104	154	184	274	394	564
	300	182	182	392	822	183	332	562	183	393	333	563	473	104	104	154	184	274	394	564
	400	182	182	392	822	183	332	562	183	393	333	563	473	104	104	154	184	274	394	564
	500	152	152	332	682	153	272	472	153	333	273	473	393	823	823	154	154	254	334	474
	600	102	102	272	562	123	222	392	123	273	253	393	333	683	683	124	124	224	274	394
	750	681	681	182	392	103	122	332	103	253	183	273	273	563	563	104	104	184	254	334
	1000	331	331	102	222	682	681	182	682	183	153	223	183	473	473	683	823	124	184	224
	1500	121	121	331	821	472	251	681	272	103	103	153	123	333	273	473	563	823	124	154
	2000	560	560	151	391	252	820	391	152	562	562	822	822	183	183	273	333	473	683	823
	3000	120	120	470	121	102	100	121	561	222	222	332	332	682	682	103	123	183	273	333
	4000	•	•	8R2	180	471	•	330	271	122	102	152	152	332	332	562	562	103	123	183
	5000	•	•	•	•	221	•	•	121	561	561	102	821	182	182	272	332	472	822	103

Note:

1. Capacitors rated for 1000 Vdc and up may require conformal coating to preclude the possibility of surface arcing.
2. Leaded configurations recommended for those larger sizes where product is more susceptible to mechanical and thermal stress. Reference leaded catalog options or contact factory for additional information.

PART NUMBER DEFINITION / ORDERING INFORMATION

1812	N7	153	K	501	P	M	W

Case Size
18 = Length (0.180")
12 = Width (0.125")

Dielectric
N7 = COG / NPO
Ultra Stable

Capacitance
Value in pF
Two significant figures
followed by number
of zeros. ie:
103 = 10,000 pF
= 0.010 µF

Tolerance
B = ±0.10 pF (<10 pF)
C = ±0.25 pF (<10 pF)
D = ±0.50 pF (<10 pF)
F = ±1%
G = ±2%
J = ± 5%
K = ±10%
M = ±20%
Z = +80 / -20%
P = +100 / -0%

Working Voltage
Value in Vdc
Two significant figures
followed by number
of zeros. ie:
501 = 500 Vdc
102 = 1000 Vdc

Termination
P = Pd / Ag
S = Ag
N = Ni barrier/100% Sn

Marking
M = Marked
Blank = Unmarked

Packaging
W = Waffle
Recommended
≥1515 Pkg Size
T = Tape & Reel
Blank = Bulk (Std)

APPLICATION SPECIFIC PRODUCTS

Eclipse NanoMed's experienced staff is ready to assist you with your application specific requirements. Our product is processed in a state-of-the-art facility, complete with a Class 10,000 clean room, a full service machine shop and extensive testing options, guaranteed to satisfy the most rigid requirements. Whether your application requires Industrial, Military or Automotive grade capacitors, or if your product will be exposed to even higher temperature environments, we can help.

Commercial • Military Grade • Industrial • Medical • Automotive • +300℃ High Temperature

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