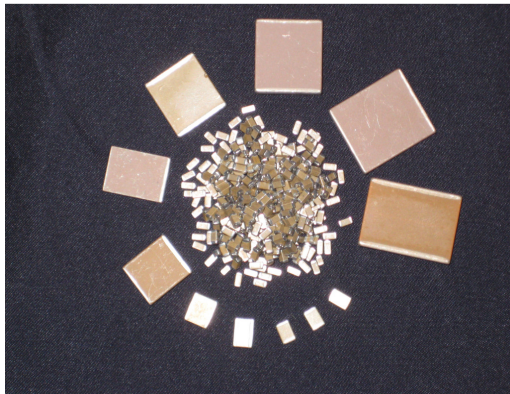


MULTILAYER CERAMIC CAPACITORS

+300°C Class II – 25 Vdc to 1.0 KVdc



Eclipse NanoMed manufactures a leading edge line of Class II multilayer ceramic capacitors that are intended for operation from -55 to +300°C.

Our proprietary dielectric material formulations achieve exceptionally high levels of volumetric efficiency, dielectric breakdown and insulation resistance while maintaining predictable performance characteristics related to variations in temperature, applied voltage and time.

Typical applications include decoupling, by-pass, filtering, transient voltage suppression, blocking and energy storage for use in the harsh environments associated with the down-hole, aerospace / automotive engine compartments and geophysical probes .

PERFORMANCE CHARACTERISTICS

Operating Temperature Range

-55 to +300°C

Temperature Coefficient

ΔC @ ±15% Max, -55 to +125°C (±8% Max Typ)

ΔC @ +15 / -86% Max, -55 to +300°C

Aging Rate

< 2% per decade hour

Insulation Resistance

1000 ΩF or 100 GΩ w/e less @ wvdc & +25°C

100 ΩF or 10 GΩ w/e less @ wvdc & +125°C

0.1 ΩF or 10 MΩ w/e less @ +300°C

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

2.5% Max @ 1kHz & +25°C (<1.2% Typ)

<1% Typ @ +300°C

Voltage - Temperature Coefficient

ΔVTC @ +15 / -88% Max, -55 to +300°C & WVDC

Test Parameters

1KHz ± 50 Hz, 1.0 ± 0.2 VRMS @ +25°C

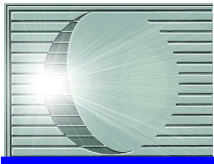
MECHANICAL DIMENSIONS

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)
2220	0.220 (5.590)	± 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)	± 0.030 (0.762)	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)	± 0.030 (0.762)	0.650 (16.50)	± 0.030 (0.762)	0.200 (5.08) Max	0.040 (1.020)	± 0.020 (0.510)

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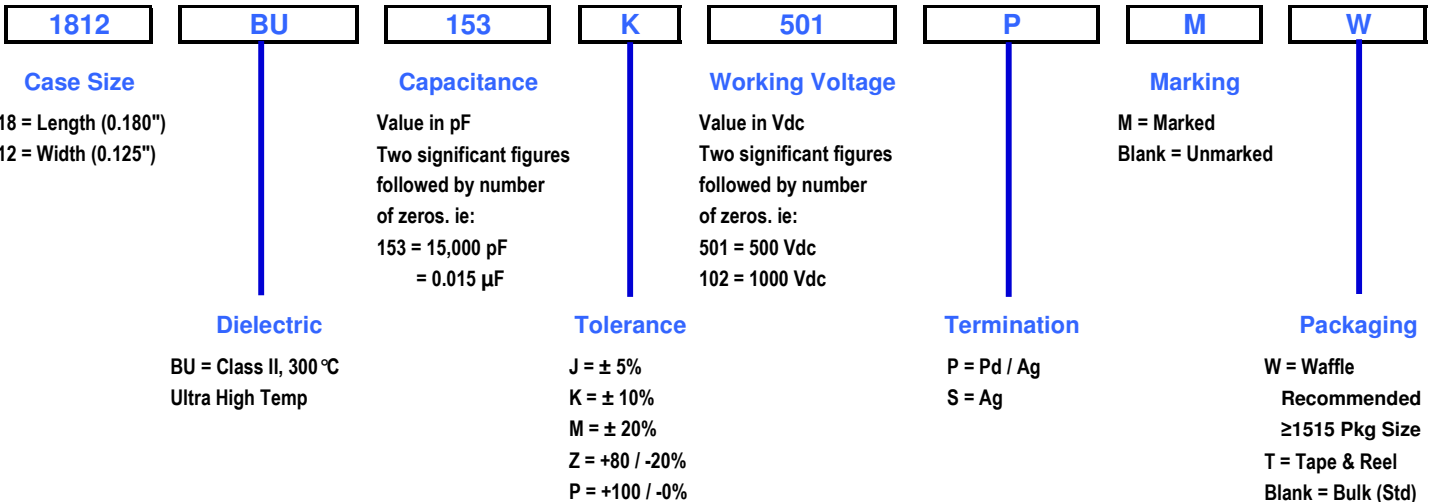
CAPACITANCE & VOLTAGE SELECTION

Chip Size	0805	1005	1206	1210	1515	1805	1808	1812	1825	2020	2220	2225	2520	3333	3530	4040	4540	5550	6560	7565	
Min Cap	101	101	101	102	102	821	102	102	102	102	102	102	102	102	102	102	102	102	102	102	
Working Voltage DC	25	823	124	224	474	105	274	334	105	255	185	255	275	275	685	565	106	106	186	226	336
	50	823	124	224	474	105	274	334	105	255	185	255	275	275	685	565	106	106	186	226	336
	100	333	473	823	184	564	104	184	564	125	105	125	155	155	335	335	565	565	825	126	186
	200	562	822	183	393	254	183	393	154	564	564	684	864	684	185	155	275	275	475	565	825
	250	332	392	103	223	154	103	223	823	334	334	394	474	474	125	105	155	185	275	395	565
	300	152	222	682	103	104	472	123	563	224	224	274	334	334	684	684	105	125	185	275	335
	400	251	681	252	472	473	152	562	273	124	124	124	184	154	394	394	564	684	105	125	185
	500	221	271	102	222	253	681	272	153	683	683	823	104	823	224	224	334	394	564	824	105
	600	•	•	•	•	153	•	102	682	393	393	473	683	563	124	124	184	254	394	474	684
	750	•	•	•	•	822	•	•	272	183	183	273	273	273	683	563	104	124	184	274	334
	1000	•	•	•	•	222	•	•	•	562	822	103	123	123	273	273	333	473	563	104	124

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



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°C High Temperature