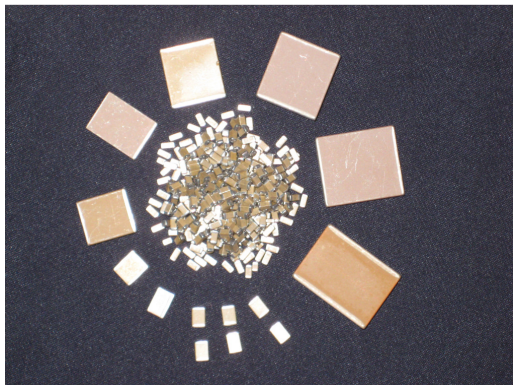


MULTILAYER CERAMIC CAPACITORS

X7R High Reliability – 25 Vdc to 2 KVdc



Eclipse NanoMed manufactures a leading edge line of X7R multilayer ceramic capacitors that are intended for operation in high reliability applications.

Intended for Medical, Military and Aerospace applications and those consumer requirements where commercial options do not provide the level of enhanced reliability critical to ensuring long term performance. Product is designed using strict design criteria and receives 100% Group A Inspection including burn-in, DWV, +25°C IR, capacitance and dissipation factor.

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

PERFORMANCE CHARACTERISTICS

Operating Temperature Range

-55 to +125°C

Temperature Coefficient

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

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

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)

Voltage - Temperature Coefficient

Pre-defined limits available - Contact factory

Test Parameters

1kHz ± 50 Hz, 1.0 ± 0.2 VRMS @ +25°C

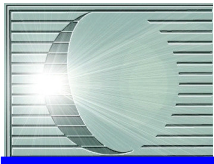
MECHANICAL DIMENSIONS

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	2225	2520	3333	3530	4040	4540	5550	6560	7565	
Min Cap	101	101	101	102	102	101	101	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	275	275	685	565	106	126	186	256	336
	50	823	124	224	474	105	274	334	105	255	185	275	275	685	565	106	126	186	256	336
	100	823	124	224	474	105	274	334	105	255	185	275	275	685	565	106	126	186	256	336
	200	333	473	104	184	564	104	154	564	125	105	155	155	335	335	565	565	825	126	186
	250	183	273	563	124	474	563	104	394	105	824	125	125	275	275	395	475	685	106	126
	300	123	183	393	823	394	393	683	274	824	684	105	105	225	225	335	395	565	825	126
	400	562	822	183	393	254	183	393	154	564	564	824	684	185	155	275	275	475	685	825
	500	332	472	103	223	154	103	223	823	334	334	474	474	105	105	155	185	275	395	565
	600	152	252	682	123	104	472	123	563	224	224	334	334	684	684	105	125	185	275	335
	750	821	122	332	682	563	252	682	333	124	124	224	184	474	394	684	684	125	155	225
	1000	•	•	471	102	273	•	272	153	683	683	104	104	224	224	334	394	564	824	102
	1500	•	•	•	•	822	•	•	272	183	223	333	333	683	683	104	124	184	274	334
2000	•	•	•	•	222	•	•	•	472	822	123	123	273	273	393	473	683	104	124	

- Note:**
1. Capacitors rated for 1000 Vdc and up may require conformal coating to preclude the possibility of surface arcing.
 2. Group A test sequence and limits comply with the requirements of MIL-PRF-49467 and MIL-PRF-55681, where applicable.
 3. 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	B7	104	K	501	P	H	M	W
Case Size		Capacitance		Working Voltage		Hi Rel		Packaging
18 = Length (0.180") 12 = Width (0.125")		Value in pF Two significant figures followed by number of zeros. ie: 104 = 100,000 pF = 0.10 μF		Value in Vdc Two significant figures followed by number of zeros. ie: 501 = 500 Vdc 102 = 1000 Vdc		Group A Insp		W = Waffle Recommended ≥1515 Pkg Size T = Tape & Reel Blank = Bulk (Std)
	Dielectric		Tolerance		Termination		Marking	
	B7 = X7R Stable material		J = ± 5% K = ± 10% M = ± 20% Z = +80 / -20% P = +100 / -0%		P = Pd / Ag S = Ag N = Ni barrier/100% Sn		M = Marked Blank = Unmarked	

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