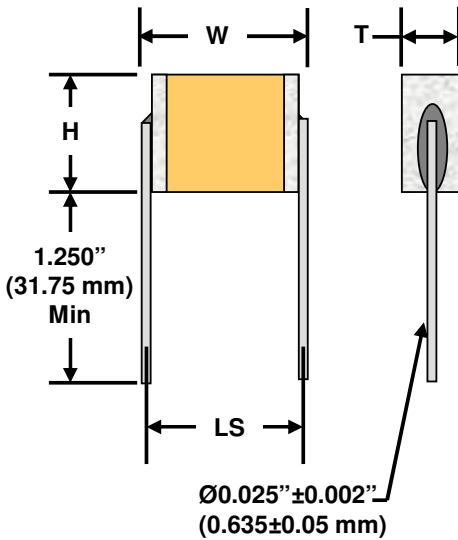


MULTILAYER CERAMIC CAPACITORS

+300 °C Radial Lead Class II / COG – 25 Vdc to 4 KVdc



Eclipse NanoMed manufactures a line of +300 °C High Temperature Radial Leaded COG / Class II ceramic capacitors, which are intended for those applications where there may be concerns over exposure to thermal and / or mechanical shock during a typical installation process or operating conditions.

These capacitors incorporate our leading edge dielectric materials and are manufactured using a proprietary high temperature lead attach process that can withstand continuous exposure to temperatures well in excess of +300 °C.

Utilized in distributed power systems intended for the harsh environments associated with the down-hole industry, aerospace / automotive engine compartments and geophysical probes, typical applications for X7R capacitors include decoupling, by-pass, filtering, transient voltage suppression, blocking and energy storage. COG / NPO capacitor applications include precision timing circuits, RF oscillators and other precision circuitry requiring low loss, stable performance.

PERFORMANCE CHARACTERISTICS

Operating Temperature Range

-55 to +300 °C

Temperature Coefficient

COG @ 0 ±30 ppm / °C Max, -55 to +300 °C
Class II @ +15 / -86% Max, -55 to +300 °C

Test Parameters

1KHz ± 100 Hz, 1.0 ± 0.2 VRMS @ +25 °C
1 MHz ± 100 kHz, 1.0 ± 0.2 VRMS @ +25 °C

IR test voltage @ WVDC or 500 vdc w/e less

Insulation Resistance

1000 ΩF or 100 GΩ w/e less @ +25 °C
100 ΩF or 10 GΩ w/e less @ +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

COG = 0.005% Max @ +25 °C
Class II = 2.5% Max @ +25 °C (<1.2% Typ)
1 MHz @ C ≤ 100 pF / 1 kHz @ C > 100 pF

Voltage Temperature Coefficient

COG: Negligible voltage effect
Class II @ +15 / -88% Max, -55 to +300 °C & WVDC

Aging Rate

COG: None / Class II @ ≤2% per decade hour

MECHANICAL DIMENSIONS

Dimensions in (mm)	Uncoated Case Size												
	15A	18C	18D	20A	22A	22B	25A	35A	40A	45A	55A	65A	75A
Width (Max)	0.230 (5.84)	0.275 (6.99)	0.275 (6.99)	0.280 (7.11)	0.300 (7.62)	0.300 (7.62)	0.325 (8.26)	0.390 (9.91)	0.485 (12.32)	0.540 (13.72)	0.640 (16.26)	0.740 (18.80)	0.840 (21.34)
Height (Max)	0.175 (4.45)	0.145 (3.68)	0.275 (6.99)	0.225 (5.72)	0.225 (5.72)	0.275 (6.99)	0.225 (5.72)	0.325 (8.26)	0.425 (10.80)	0.425 (10.80)	0.530 (13.46)	0.630 (16.00)	0.690 (17.53)
Thickness (Max)	0.150 (3.81)	0.110 (2.54)	0.110 (2.54)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)	0.180 (4.57)
Lead Spacing ±0.030" (0.762)	0.170 (4.32)	0.200 (5.08)	0.200 (5.08)	0.220 (5.59)	0.250 (6.35)	0.250 (6.35)	0.275 (6.99)	0.375 (9.53)	0.425 (10.80)	0.475 (12.07)	0.575 (14.61)	0.675 (17.15)	0.780 (19.80)

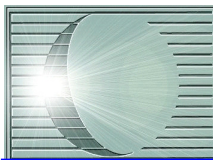
Notes:

- Dimensions reflect those for an uncoated package size designed at the maximum available capacitance value. Thickness of device can vary and may be thinner than the maximum depending on actual capacitance
- Higher voltage product may require conformal coat to preclude the possibility of arc over. Reference Radial / Coated catalog for alternative designs.

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CAPACITANCE & VOLTAGE SELECTION

Case Size	15A		18C		18D		20A		22A		22B		25A		35A		40A		45A		55A		65A		75A		
Dielectric	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	
Min Cap	100	102	100	102	270	102	100	102	100	102	150	102	150	102	470	102	101	102	101	102	101	102	101	102	101	102	
Working Voltage DC	25	183	105	183	105	393	255	333	185	393	255	563	275	473	275	104	565	154	106	184	106	274	186	394	226	564	336
	50	183	105	183	105	393	255	333	185	393	255	563	275	473	275	104	565	154	106	184	106	274	186	394	226	564	336
	100	183	564	183	564	393	125	333	105	393	125	563	155	473	155	104	335	154	565	184	565	274	825	394	126	564	186
	200	153	254	153	154	333	564	273	564	333	684	473	864	393	684	823	155	154	275	154	275	274	475	334	565	474	825
	250	123	154	123	823	273	334	253	334	273	394	393	474	333	474	683	105	124	155	124	185	224	275	274	395	394	565
	300	103	104	103	563	253	224	183	224	253	274	273	334	273	334	563	684	104	105	104	125	184	185	254	275	334	335
	400	682	473	682	273	183	124	153	124	183	124	223	184	183	154	473	394	683	564	823	684	124	105	184	125	254	185
	500	562	253	472	153	153	683	123	683	153	823	183	104	153	823	333	224	563	334	683	394	104	564	154	824	184	105
	600	472	153	332	682	123	393	103	393	123	473	153	683	123	563	273	124	473	184	563	254	823	394	124	474	154	684
	750	272	822	182	272	682	183	682	183	822	273	103	273	103	273	253	563	333	104	393	124	563	184	823	274	104	334
	1000	152	222	102	•	392	562	392	822	472	103	562	123	472	123	123	273	183	333	183	473	333	563	473	104	563	124
	1500	561	•	331	•	152	•	122	•	152	•	222	•	182	•	392	•	682	•	822	•	123	•	183	•	223	•
	2000	251	•	121	•	681	•	561	•	821	•	102	•	102	•	222	•	332	•	392	•	562	•	822	•	103	•
	3000	560	•	•	•	151	•	181	•	221	•	271	•	271	•	561	•	102	•	102	•	182	•	252	•	332	•
4000	•	•	•	•	•	•	560	•	680	•	820	•	820	•	181	•	271	•	331	•	471	•	681	•	821	•	

Notes:

- Other sizes / values may be available, please contact factory.
- Ceramic capacitors can be exposed to high levels of thermal stress during installation and may experience microfracturing if proper installation techniques are not utilized. If this is a concern, please contact factory regarding installation recommendations.

PART NUMBER DEFINITION / ORDERING INFORMATION

RU	65A	BU	126	K	101	M	W
Package Type RU = Radial Uncoated RC = Radial Coated Note - RC HT option currently under development	Dielectric NU = COG / NPO Ultra Stable, +300°C BU = Class II Stable, +300°C		Tolerance B = ±0.10 pF (<10 pF) J = ± 5% C = ±0.25 pF (<10 pF) K = ±10% D = ±0.50 pF (<10 pF) M = ±20% F = ±1% Z = +80 / -20% G = ±2% P = +100 / -0% COG only, tolerance B thru G		Marking M = Marked Blank = Unmarked		
Case Size Ref Dimensional Chart		Capacitance Value in pF Two significant figures followed by number of zeros. ie: 126 = 12,000,000 pF = 12.0 µF		Working Voltage Value in Vdc Two significant figures followed by number of zeros. ie: 101 = 100 Vdc 102 = 1000 Vdc		Packaging W = Waffle 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°C High Temperature