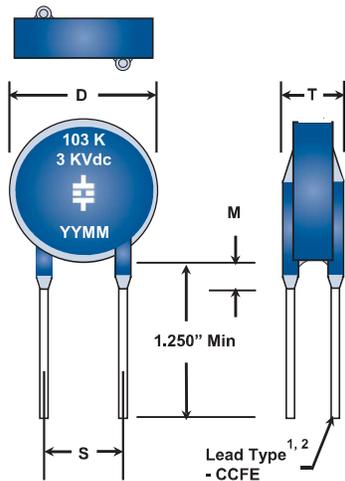


High Voltage Radial Leaded Disc Capacitors

Military & Commercial Level Class 1 Negative TC Low Loss – 3 kVdc to 20 kVdc



1. Lead Size: D30, D40 @ 0,025" Dia (#22 AWG) [0,64 mm] D50 & larger @ 0,032" Dia (#20 AWG) [0,81mm],
2. Lead Finish: Sn60 / Pb40 Solder
3. Order of marking may vary depending on size of capacitor.

CalRamic Technologies LLC manufactures a series of highly reliable, single layer, conformally coated, negative temperature compensating, leaded ceramic disc capacitors that deliver both very stable and predictable performance characteristics typically associated with low loss dielectrics.

These capacitors, which draw on thirty plus years of proven design and process experience, are manufactured under strict quality control guidelines and utilize a double action press to minimize gradients within the dielectric powder, producing a finished capacitor with a uniform fired ceramic density and unparalleled performance in high voltage applications. Leaded construction limits risk for damage due to exposure to mechanical and thermal stress.

Essential where low losses and tight capacitance tolerances are critical, these capacitors are ideally suited as snubbers for switching power supplies, coupling and decoupling capacitors, inverter circuitry, lighting ballasts, and other high voltage pulse applications.

Performance Characteristics

Specification	Dielectric Type			
	CR01	CR03	CR17	CR22
Material Classification	N750 (U2J)	N1500 (P3K)	N4700 (T3M)	N5600 (U3N)
Coefficient of Thermal Expansion	11 x 10 ⁻⁶ / °C	11 x 10 ⁻⁶ / °C	11 x 10 ⁻⁶ / °C	11 x 10 ⁻⁶ / °C
Density	72 g / in ³			
Operating Temperature Range	-55 to +125°C			
Aging Rate	0			
Temperature Coefficient	-750 PPM / °C ±10% Max	-1500 PPM / °C ±17% Max	-4700 PPM / °C ±52% Max	-5600 PPM / °C ±59% Max
Voltage Coefficient	-8% Max @ WVDC		-14% Max @ WVDC	
Capacitance Range	2.0 pF to 1000 pF	5.5 pF to 2700pF	29 pF to 0.014uF	34 pF to 0.017 μF
Voltage Range	3 kVDC to 20 kVDC			
Insulation Resistance @ +25°C	100,000 MΩ or 1000 MΩ - μF, W/E is less			
Insulation Resistance @ +125°C	10,000 MΩ or 100 MΩ - μF, W/E is less			
Dissipation Factor	0.2% Max			
DWV	1.5 x WVDC			

General Information

1. Standard inspection and Group A testing, when required, is performed in accordance with applicable requirements of MIL-PRF-49467, DSCC 87125, DSCC 89087 and NASA GSFC S-311-15C.
2. Group B Inspection is available upon request.
3. Special testing including 100% Partial Discharge (Corona) is available upon request. Contact factory.
4. Custom voltages, package sizes and capacitance values available. Contact factory.
5. Higher voltage parts may require further encapsulation to prevent surface arc over and breakdown. When required, parts should first be cleaned, and oven dried at +85°C. Silicone rubbers or a suitable epoxy may be used and de-airing of encapsulates is recommended.
6. Testing of higher voltage parts before installation and / or supplemental encapsulation, may be done in a suitable, non-contaminating dielectric fluid like FC-40.
7. Large ceramic capacitors, even leaded devices are susceptible to damage when exposed to thermal and / or mechanical shock. Refer to Technical Bulletin AN103 for handling and installation recommendations.

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Electrical / Mechanical Characteristics

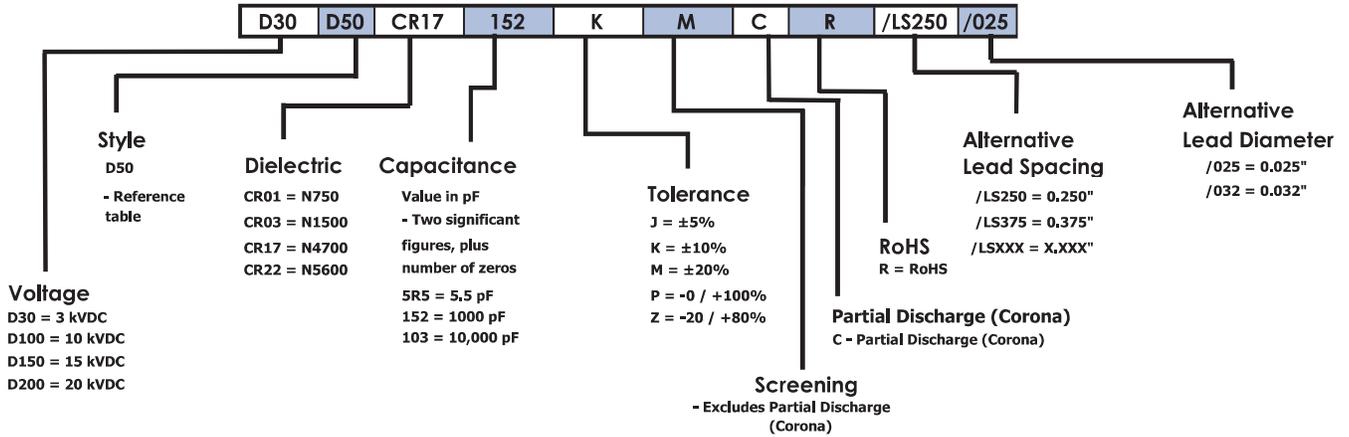
Working Voltage	Disc Style	Dimensions [in]				Actual Capacitance Value Range [pF]							
		D Max	S ± 0.030	T Max	M Max	CR01		CR03		CR17		CR22	
						Min	Max	Min	Max	Min	Max	Min	Max
3 kVDC	D30	0.300	0.250	0.210	0.125	14	30	37	86	190	430	230	510
	D40	0.400	0.250	0.210	0.125	20	63	55	170	280	910	330	1000
	D50	0.500	0.375	0.210	0.125	45	120	130	340	640	1700	750	2000
	D60	0.600	0.375	0.210	0.125	80	160	220	440	1200	2200	1400	2700
	D70	0.700	0.500	0.210	0.125	100	250	280	700	1500	3600	1700	4300
	D80	0.800	0.500	0.210	0.125	150	300	420	860	2200	4300	2500	5100
	D90	0.900	0.500	0.210	0.125	180	430	500	1200	2600	6100	3000	7200
	D100	1.000	0.500	0.210	0.125	250	530	670	1400	3500	7500	4100	8900
	D120	1.200	0.500	0.210	0.125	320	820	880	2200	4500	11000	5300	13000
D140	1.400	0.625	0.210	0.125	500	1000	1400	2700	7100	14000	8300	17000	
5 kVDC	D30	0.300	0.250	0.250	0.125	8	17	22	51	120	250	140	300
	D40	0.400	0.250	0.250	0.125	12	37	33	100	170	550	200	630
	D50	0.500	0.375	0.250	0.125	27	75	74	200	390	1000	450	1200
	D60	0.600	0.375	0.250	0.125	48	98	140	250	680	1400	800	1600
	D70	0.700	0.500	0.250	0.125	60	150	170	410	850	2000	1000	2500
	D80	0.800	0.500	0.250	0.125	90	170	250	510	1300	2500	1500	3000
	D90	0.900	0.500	0.250	0.125	110	250	300	720	1600	3600	1800	4300
	D100	1.000	0.500	0.250	0.125	150	320	410	890	2100	4400	2500	5300
	D120	1.200	0.500	0.250	0.125	190	490	530	1300	2700	7000	3200	8200
D140	1.400	0.625	0.250	0.125	300	610	820	1700	4300	8700	5000	10000	
7.5 kVDC	D30	0.300	0.250	0.310	0.150	5.5	12	15	34	76	170	89	200
	D40	0.400	0.250	0.310	0.150	8	25	22	70	120	360	140	430
	D50	0.500	0.375	0.310	0.150	18	49	50	130	260	700	300	840
	D60	0.600	0.375	0.310	0.150	32	65	87	170	450	920	530	1100
	D70	0.700	0.500	0.310	0.150	40	100	110	270	570	1400	670	1700
	D80	0.800	0.500	0.310	0.150	60	120	170	340	850	1700	1000	2000
	D90	0.900	0.500	0.310	0.150	72	170	200	480	1100	240	1200	2900
	D100	1.000	0.500	0.310	0.150	98	200	270	580	1400	2900	1700	3600
	D120	1.200	0.500	0.310	0.150	130	320	350	910	1800	4600	2200	5500
D140	1.400	0.625	0.310	0.150	200	410	550	1100	2900	5800	3300	6800	
10 kVDC	D30	0.300	0.250	0.440	0.170	4	8	11	25	57	130	67	150
	D40	0.400	0.250	0.440	0.170	6	18	17	53	84	270	99	300
	D50	0.500	0.375	0.440	0.170	14	37	37	100	200	530	230	610
	D60	0.600	0.375	0.440	0.170	24	48	66	130	340	700	400	820
	D70	0.700	0.500	0.440	0.170	30	77	83	200	430	1100	500	1200
	D80	0.800	0.500	0.440	0.170	45	82	130	250	640	1300	750	1500
	D90	0.900	0.500	0.440	0.170	54	130	150	360	760	1700	900	2000
	D100	1.000	0.500	0.440	0.170	73	160	210	440	1100	2200	1300	2500
	D120	1.200	0.500	0.440	0.170	95	240	270	680	1400	3400	1600	4100
D140	1.400	0.625	0.440	0.170	150	300	410	840	2200	4300	2500	5100	
15 kVDC	D30	0.300	0.250	0.545	0.175	3	6	7.5	17	38	87	45	100
	D40	0.400	0.250	0.545	0.175	4	12	11	34	56	170	66	200
	D50	0.500	0.375	0.545	0.175	9	24	25	68	130	340	150	410
	D60	0.600	0.375	0.545	0.175	16	32	44	91	230	460	270	550
	D70	0.700	0.500	0.545	0.175	20	51	55	140	290	720	340	860
	D80	0.800	0.500	0.545	0.175	30	61	83	170	430	870	500	1000
	D90	0.900	0.500	0.545	0.175	36	87	99	240	510	1200	600	1400
	D100	1.000	0.500	0.545	0.175	49	100	140	290	690	1500	810	1700
	D120	1.200	0.500	0.545	0.175	64	160	180	440	900	2200	1100	2700
D140	1.400	0.625	0.545	0.175	99	200	280	560	1500	2900	1700	3400	
20 kVDC	D50	0.500	0.375	0.650	0.175	7	18	19	51	96	250	120	300
	D60	0.600	0.375	0.650	0.175	12	24	33	67	170	340	200	410
	D70	0.700	0.500	0.650	0.175	15	37	42	100	220	550	250	630
	D80	0.800	0.500	0.650	0.175	23	46	62	120	320	650	380	770
	D90	0.900	0.500	0.650	0.175	27	65	74	170	380	920	450	1000
	D100	1.000	0.500	0.650	0.175	37	80	110	220	520	1100	610	1300
	D120	1.200	0.500	0.650	0.175	48	120	140	340	680	1700	800	2000
D140	1.400	0.625	0.650	0.175	75	150	210	410	1100	2000	1300	2500	

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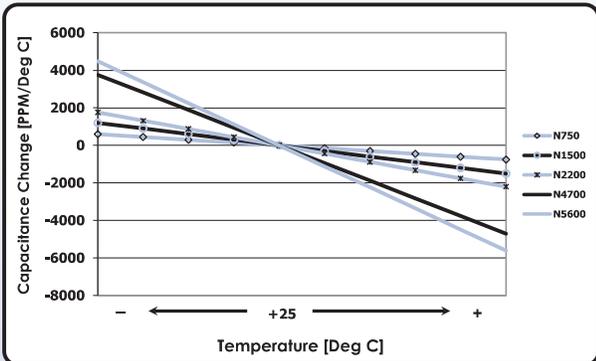
High Voltage Radial Ledged Disc Capacitors

Military & Commercial Level Class 1 Negative TC Low Loss – 3 kVdc to 20 kVdc

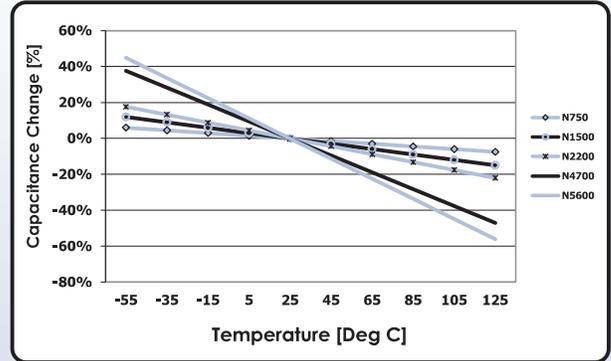
Part Number / Ordering Information



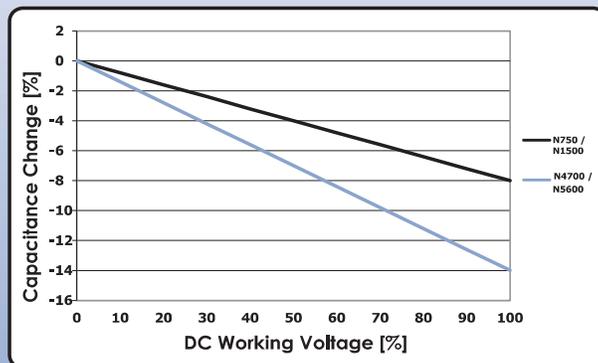
Performance Charts (Typical)



Temperature Coefficient [PPM / °C]



Temperature Coefficient [% Vs Temp]



Voltage Coefficient