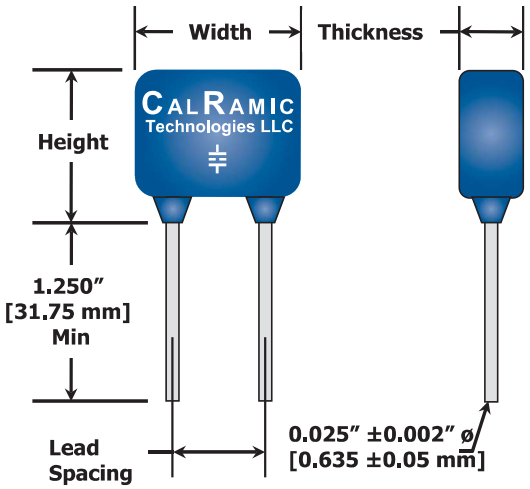
High Voltage Radial Leaded Pulse Capacitors

Military & Commercial Level Class 1 Negative TC Low Loss – 500 Vdc to 10 kVdc



Lead Type: #22 AWG, CCFE / Solder plate
RoHS Option – 100% Tin plate

CalRamic Technologies LLC manufactures a series of highly reliable, military / commercial level, high voltage, radial leaded, ceramic capacitors that are designed specifically for those environments where the assembly may be exposed to high levels of thermal and / or mechanical stress. In addition, these assemblies are packaged in a high resistance conformal coating that provides enhanced electrical isolation and added environmental protection.

Intended for continuous operation at full rated voltage and across the entire operating temperature range, these capacitors utilize an inherently low loss dielectric material and a special internal design specifically intended to provide a device that exhibits very low ESR / ESL characteristics, especially at higher frequencies.

Available with stable CR09 dielectric material, these capacitors are ideally suited for high current, pulse discharge applications.

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Performance Characteristics

Specification	Dielectric Type
	CR09
Material Classification	N2200 (R3L)
Coefficient of Thermal Expansion	11 x 10^{-6} / °C
Density	72 g / in^3
Operating Temperature Range	-55 to +125°C
Aging Rate	0
Temperature Coefficient	-2200 PPM / °C ±24% Max
Voltage Coefficient	-7% Max @ WVDC
Capacitance Range	120 pF to 1.0uF
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 ≤ 1250 Vdc or 1.2 X WVDC > 1250 Vdc

Mechanical Dimensions

Dimensions inches [mm]	Product Style												
	PDHV01	PDHV02	PDHV03	PDHV10	PDHV04	PDHV11	PDHV05	PDHV06	PDHV07	PDHV13	PDHV14	PDHV15	PDHV16
Width Max	0.250 [6.35]	0.320 [8.13]	0.370 [9.40]	0.450 [11.43]	0.470 [11.94]	0.550 [13.97]	0.570 [14.48]	0.670 [17.02]	0.770 [19.56]	0.850 [21.59]	1.050 [26.67]	1.250 [31.75]	1.450 [36.83]
Height Max	0.220 [5.59]	0.280 [7.11]	0.300 [7.62]	0.220 [5.59]	0.400 [10.16]	0.280 [7.11]	0.500 [12.70]	0.600 [15.24]	0.720 [18.29]	0.400 [10.16]	0.500 [12.70]	0.600 [15.24]	0.720 [18.29]
Thickness Max	0.200 [5.08]	0.250 [6.35]	0.250 [6.35]	0.200 [5.08]	0.270 [6.86]	0.270 [6.86]	0.270 [6.86]	0.270 [6.86]	0.270 [6.86]	0.270 [6.86]	0.270 [6.86]	0.270 [6.86]	0.270 [6.86]
Lead Spacing ±0.030 [0.762]	0.170 [4.32]	0.220 [5.59]	0.275 [6.99]	0.300 [7.62]	0.375 [9.53]	0.400 [10.16]	0.475 [12.07]	0.575 [14.61]	0.675 [17.15]	0.700 [17.78]	0.975 [24.77]	1.175 [29.85]	1.300 [33.02]

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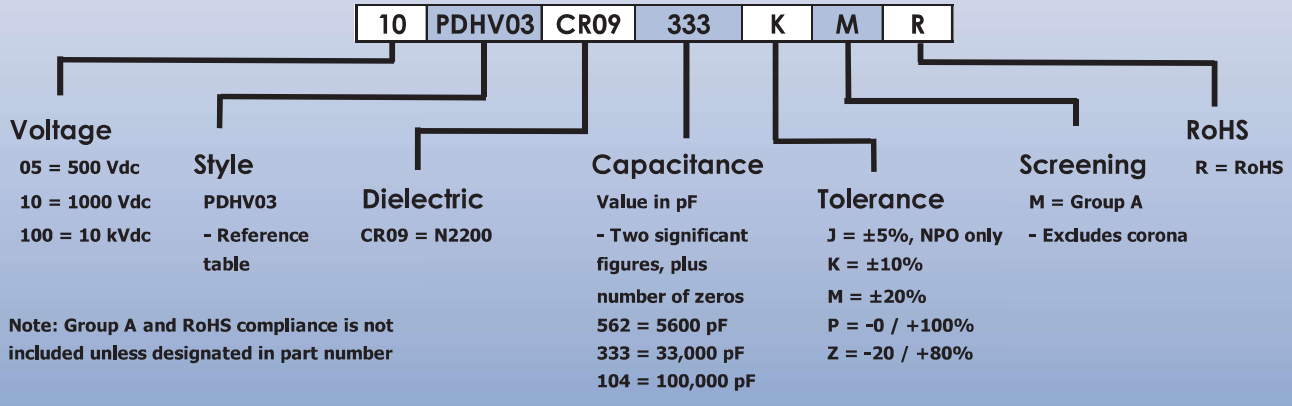
Electrical Characteristics

(CR09) Capacitance Range														
Style		PDHV01	PDHV02	PDHV03	PDHV10	PDHV04	PDHV11	PDHV05	PDHV06	PDHV07	PDHV13	PDHV14	PDHV15	PDHV16
Min Cap		121	181	221	181	271	281	271	471	471	471	471	471	471
WVDC	500	223	473	683	563	154	124	274	474	824	334	474	684	105
	1,000	153	333	393	333	104	683	184	274	684	224	394	564	824
	2,000	222	562	822	682	223	153	333	683	474	473	823	124	184
	3,000	•	332	472	332	123	103	223	393	104	273	563	823	124
	4,000	•	•	•	721	332	222	562	123	563	822	183	273	393
	5,000	•	•	•	•	•	152	472	103	183	562	123	183	273
	7,000	•	•	•	•	•	•	•	•	153	•	392	822	123
	10,000	•	•	•	•	•	•	•	•	•	•	272	472	822

Notes

1. Standard inspection and Group A testing when required, is performed in accordance with applicable requirements of MIL-PRF-49467.
2. Special testing including Ultrasound (C-SAM) and Partial Discharge (Corona) is available. Contact factory for more details.
3. Custom package sizes / aspect ratios, voltages and capacitance values available. Contact factory for more details.
4. Large ceramic capacitors, even leaded devices are susceptible to damage when exposed to thermal and / or mechanical shock. Refer to Technical Bulletin AN103/AN112 for handling and installation recommendations.
5. High voltage products may require additional conformal coating to prevent possible arc over,
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.

Part Number / Ordering Information



Note: Group A and RoHS compliance is not included unless designated in part number

MADE IN USA

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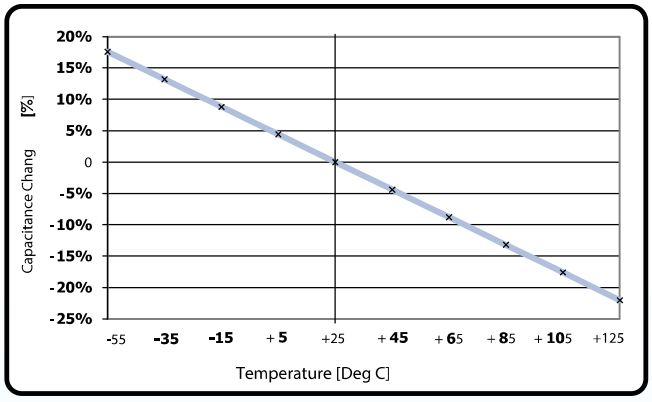
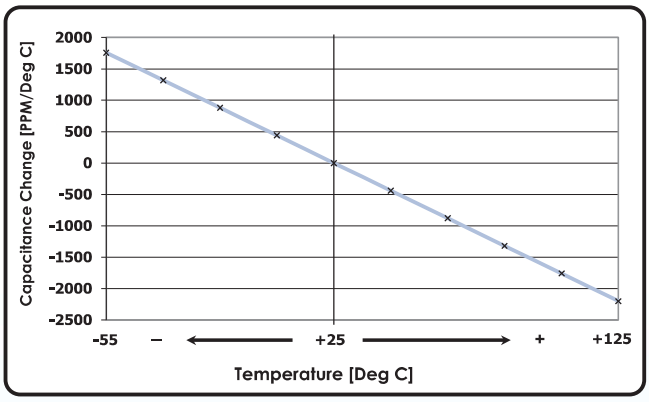
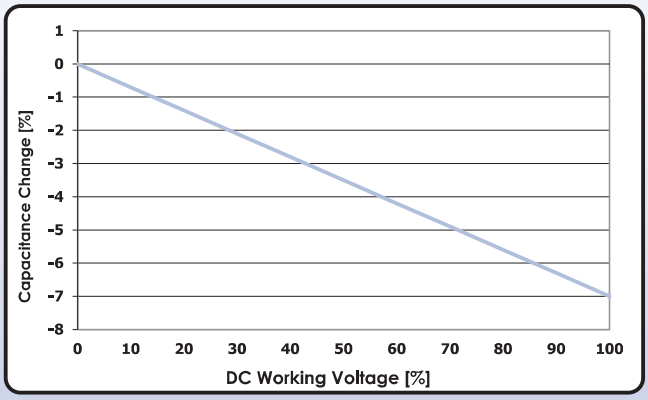
Performance Charts (Typical)



CR09 (N2200) Temperature Coefficient
% Cap Chance Vs Temp



CR09 (N2200) Temperature Coefficient
PPM Cap Change Vs Temp



CR09 (N2200) Voltage Coefficient