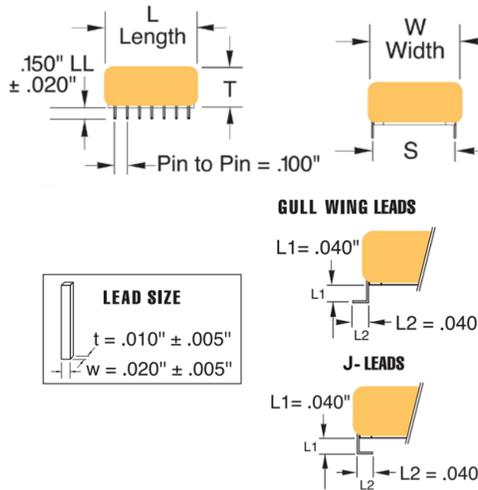


Capstick® Capacitor  
Metallized Polyester Dielectric

# CS11

Stacked Metallized  
Polyester Capacitor  
With -55°C to +125°C  
operating temperature range



## NEW

- High voltage ratings
- High ripple current ratings
- High capacitance density
- Surface mount options available
- Ultra low ESR/ESL
- Lightweight <25% of equivalent MLCC
- Low losses at high frequency
- Self-healing
- Rugged construction
- Made in U.S.A.

### 1200 VDC/630 VAC

PF Code	Value $\mu\text{F}$	W Max	T Max	L Max	$\pm 0.02$ [.]	Typical ESR 500kHz m $\Omega$	Max Ripple current 85°C 500kHz [ARMS]	Lead Configuration	Part No.
474	0,47	1.22[31.0]	0.57[14.5]	1.1 [27.5]	1.1 [27.5]	33	14,2	Thru-hole	474K1200CS11_
474	0,47	1.22[31.0]	0.57[14.5]	1.1 [27.5]	1.1 [27.5]	33	14,2	SMD GULL-WING	474K1200CS11G_
474	0,47	1.22[31.0]	0.57[14.5]	1.1 [27.5]	1.1 [27.5]	33	14,2	SMD J-Lead	474K1200CS11J_

### 1000 VDC/500 VAC

804	0.80	1.22[31.0]	0.39[9.9]	1.1 [27.5]	1.1 [27.5]	28	5,8	Thru-hole	804K1000CS11_
804	0.80	1.22[31.0]	0.39[9.9]	1.1 [27.5]	1.1 [27.5]	28	5,8	SMD GULL-WING	804K1000CS11G_
804	0.80	1.22[31.0]	0.39[9.9]	1.1 [27.5]	1.1 [27.5]	28	5,8	SMD J-Lead	804K1000CS11J_

Dimensions in inches, metric (mm) in parenthesis

Tolerance: K ( $\pm 10\%$ ) standard, J ( $\pm 5\%$ ) available

RoHS part number information

No suffix indicates RoHS-5 compliant standard part number. RoHS-5 product does not contain five of the RoHS banned materials [Hg, CrVI, Cd, PBB and PBDE] in levels exceeding the industry defined limits. Component lead wires are plated with Sn / Pb and match conventional SnPb 1 assembly requirements

For a RoHS-6 compliant part, add a -FA suffix. RoHS-6 product does not contain any of the six RoHS banned materials [Hg, CrVI, Cd, PBB, PBDE and Pb] in levels exceeding the industry defined limits. Component lead wires are plated with Sn.

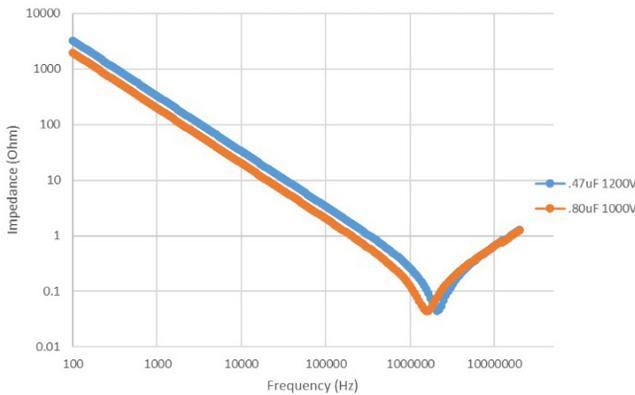
Electrical	Performance	Physical
<p><b>Tolerance:</b> Available in <math>\pm 5\%</math>, <math>10\%</math> (standard), <math>20\%</math></p> <p><b>Voltage Range:</b> 1000, 1200 VDC</p> <p><b>Dissipation Factor:</b> <math>\leq 1.0\%</math> @ <math>25^\circ\text{C}</math>, 1KHz</p> <p><b>Insulation Resistance:</b> 1000<math>\Omega\text{F}</math> or 100G<math>\Omega</math>, whichever is less at rated voltage and <math>25^\circ\text{C}</math></p> <p><b>Dielectric Strength:</b> 1.3 x RVDC, 2 seconds max.</p> <p><b>Self Inductance:</b> 2nh to 6nh typical</p> <p><b>Temperature Range:</b> -55°C to 125°C operating -55°C to 85°C @ rated DC voltage derate voltage 1.25% / °C above 85°C max operating temperature; 125°C</p>	<p><b>Accelerated DC Voltage Life Test:</b> 1,000 Hours, 85°C, 1.25 x Rated VDC <math>\Delta C/C \leq 5\%</math> DF <math>\leq 1.0\%</math>, 1KHz, 25°C IR <math>\geq 1,000</math> Megohm x <math>\mu\text{F}</math> Need not exceed 1,000 Megohms</p> <p><b>Moisture Test:</b> 85°C / 85% RH / 21 days Applied Voltage: zero bias <math>\Delta C/C \leq 7\%</math> DF <math>\leq 1.0\%</math>, 1KHz, 25°C IR <math>\geq 30\%</math> of initial limit</p> <p><b>Long Term Stability:</b> After 2 years storage, standard environment <math>\Delta C/C \leq 2\%</math></p>	<p><b>Vibration:</b> Mil Std 202 Method 204D</p> <p><b>Solder Resistance:</b> Thru-hole wave: 260°C, 5 Sec. <math>\Delta C/C \leq 2\%</math> SMD reflow: 220°C, 30 Sec. <math>\Delta C/C \leq 2\%</math></p> <p><b>Construction:</b> Non-inductively constructed with metallized polyester dielectric (polyethylene terephthalate). Parallel plate-multilayer polymer (MLP) design.</p> <p><b>Electrode:</b> Aluminum metallization</p> <p><b>Case:</b> UL94V-0 rated epoxy coating</p> <p><b>Lead Frame Material:</b> Tinned Cu Alloy Lead Frame</p> <p><b>Lead Spacing:</b> 1.1" [27.5mm] spacing nominal 7 leads per side</p> <p><b>Marking:</b> -P- type, capacitance code, tolerance code, voltage and date code</p> <p><b>Packaging:</b> Anti-static tube. SMD units dry packed with desiccant in moisture barrier bag. JEDEC level on package.</p>

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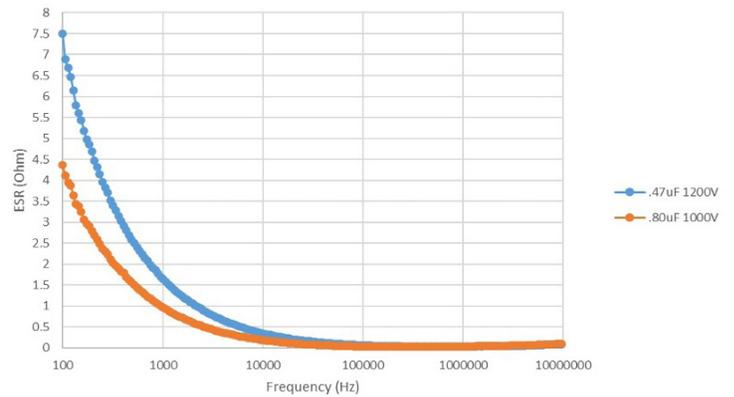
# CS11

## Electrical Characteristics 1000 VDC and 1200 VDC Ratings

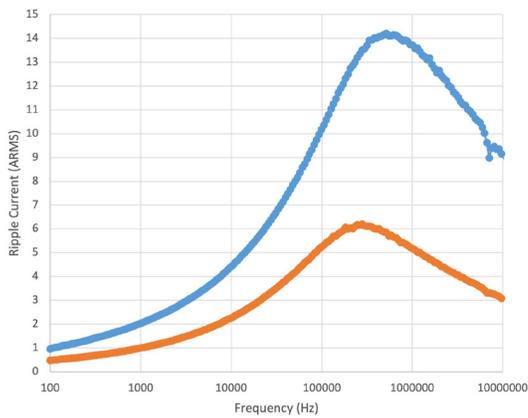
Impedance Vs Frequency



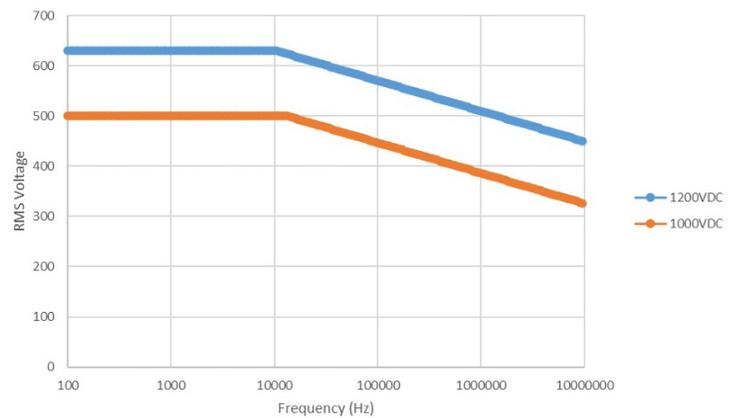
ESR Vs Frequency



Ripple Current limit Vs Frequency -55 to +85C



Maximum RMS Voltage vs frequency



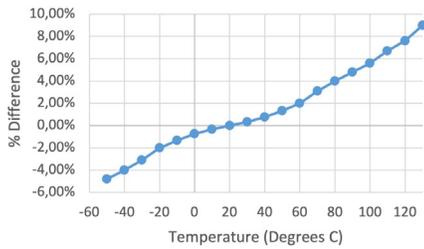
Test data is for 1200 VDC and 1000 VDC ratings only, and unless specified otherwise, all temperature and voltage tests were performed at 1kHz and all frequency tests performed at 25C°.

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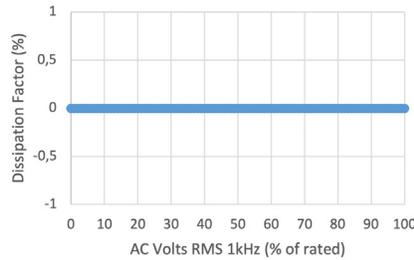
## CS11

## Electrical Characteristics

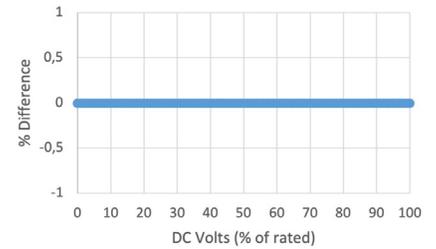
Capacitance Change (%) Vs. Temperature



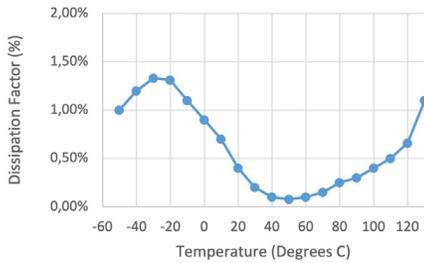
D.F. (%) Vs. AC Volts



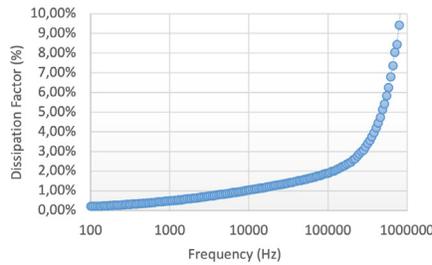
Capacitance Change (%) Vs. DC Bias Voltage



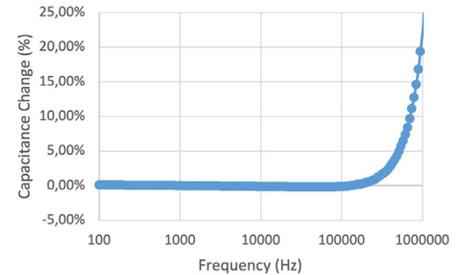
D.F. Vs. Temperature



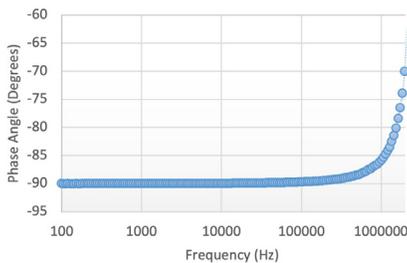
D.F. Vs. Frequency



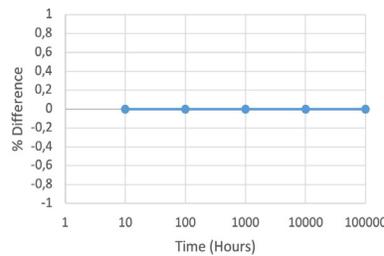
Capacitance (%) Vs. Frequency



Phase Angle vs. Frequency



Capacitance Change (%) Vs. Time



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