

MIL-PRF-49470 Electrical and Performance Characteristics

(All characteristics and test methods IAW MIL-PRF-49470)

Electrical Characteristics

Rated Voltage: 50 / 100 / 200 / 500 volts

Temperature Coefficient:	Dielectric Type	Bias = 0 Volt	Bias = Rated Voltage
	BP all Voltages	±30PPM	±30PPM
	BX 50 / 100V	±15%	+15, -25%
	BR 200V	±15%	+15, -40%
	BQ 500V	±15%	+15, -50%

Capacitance: Measured at 1.0 volt (open circuit) and 1KHz.

Capacitance Tolerance: J = ±5%, K = ±10%, M = ±20%.

Dissipation Factor: When tested at 1.0 volt (open circuit) and 1KHz, BP characteristic shall be .15% maximum and BX/BR/BQ characteristic shall be 2.5% maximum.

Dielectric Withstanding Voltage: Dielectric withstanding voltage shall be tested at 250% of rated voltage except for 500V rated parts which will be tested at 150% of rated voltage.

Insulation Resistance:

At +25°C, rated voltage: $10^{11}\Omega$ or 1000 M Ω - μ F, whichever is less.

At +125°C, rated voltage: $10^{10}\Omega$ or 100 M Ω - μ F, whichever is less.

Performance Characteristics and Test Methods

(M49470 Part Numbers)

Operating Temperature Range: The operating temperature range is -55°C to +125°C.

Thermal Shock: All parts are cycled between -55°C and +125°C, 5 times.

Voltage Conditioning: All parts are tested for 96 hours at 125°C and 200% of rated voltage except 500V rated parts are tested at 120% of rated voltage. The overall percent defective allowed (PDA) is 10%.

Solderability: Meets Mil-STD-202 and J-STD-001 requirements.

Resistance to Soldering Heat: Parts withstand 260°C for 10 seconds with no degradation in electrical performance or lead attachment.

Terminal Strength: Leads will withstand 5 pounds (4 pounds for case code 5) of applied force without rupturing.

Moisture Resistance: Every 3 months, parts are tested for 20 cycles at 90% RH and between -10°C to +65°C. Bias is applied during the first 10 cycles.

Life: Parts are tested for 1000 hours at +125°C and 200% of rated voltage except 500V rated parts shall be tested at 120% of rated voltage.

Barometric Pressure: Parts will operate at rated voltage (80% of rated voltage for 500 volt parts) at reduced pressure up to 100,000 feet.

Shock, Specified Pulse: Parts remain operational during and after impacts of 100 G's.

Vibration: Parts remain operational during and after operating in high vibration environments of up to 20 G's.

Marking: Marking shall be in accordance with Mil-STD-1285 and Mil-PRF-49470. Minimum marking will be "JB", manufacturer's code (PCI), capacitance and tolerance, and date code. Full marking will be included on the package.

Cage Code: Presidio Components, Inc. Cage Code is 60212.



PRESIDIO COMPONENTS, INC.

7169 Construction Court, San Diego, CA 92121 USA • Tel: 858-578-9390 • Fax: 800-538-3880 or 858-578-6225
Web: www.presidiocomponents.com • Email: info@presidiocomponents.com

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Additional Requirements

(T49470 Part Numbers)

Ultrasonic Imaging: All parts are imaged during in-process testing to remove voids and delaminations IAW EIA 469.

Destructive Physical Analysis: A sample of chips is examined prior to assembly for defects in the microstructure. As part of Group A, an additional sample is examined for cracks or assembly defects.

Thermal Shock: Prior to voltage conditioning, all parts are cycled between -55°C and +125°C, 20 times. Prior to life test sample pieces receive 100 cycles under conditions outlined above.

Voltage Conditioning: All parts are tested for 168 – 264 hours at 125°C and 200% of rated voltage except 500V rated parts are tested at 120% of rated voltage. The overall percent defective allowed (PDA) is 5% for case codes 4 and 5 and 8% for all other case codes. The PDA in the last 48 hours of voltage conditioning is .5% for case codes 4 and 5, and 1% for all other case codes, or 1 piece whichever is greater.

Life: For qualification, parts are tested for 4000 hours at +125°C and 200% of rated voltage except 500V rated parts shall be tested at 120% of rated voltage. For each lot, 12 pieces are tested for a 1000 hours under conditions outlined above.

Humidity, Steady State, Low Voltage: Six pieces are tested from each lot at 1.3 volts, 85% RH and 85°C, to ensure the absence of low voltage failure mechanisms. These mechanisms include microcracking.

Marking: Parts will be marked as M49470 parts except "JB" is replaced with "JT".



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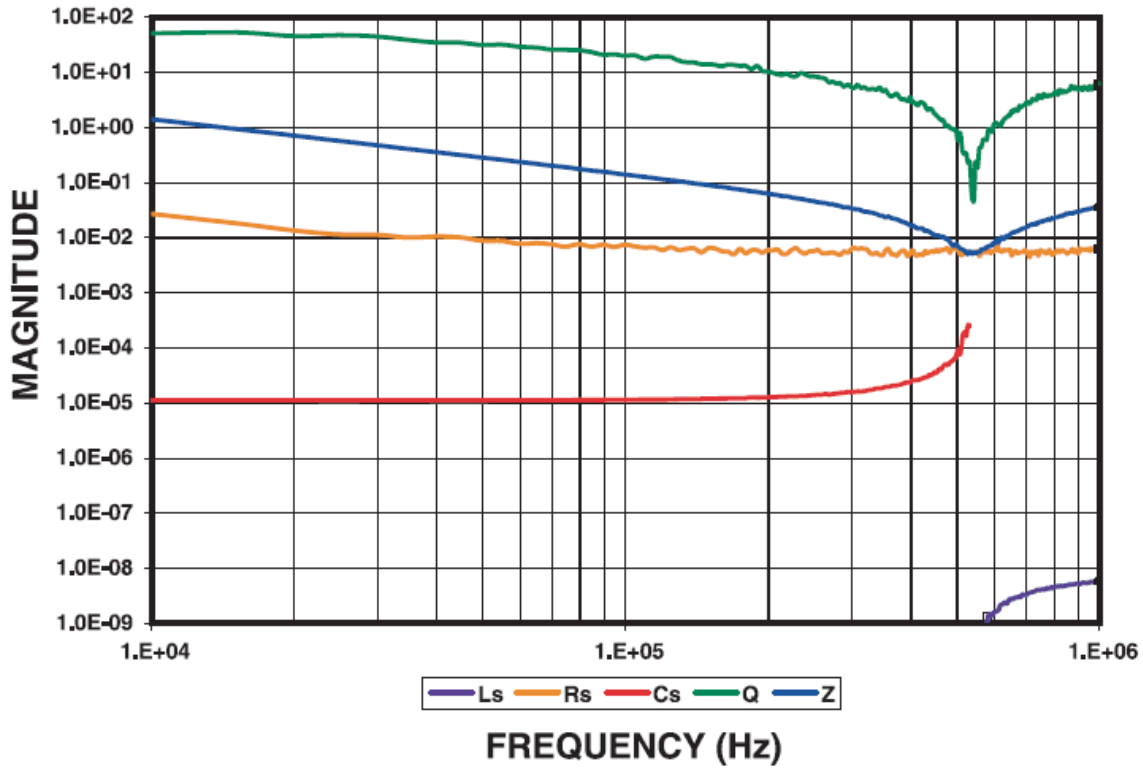
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MIL-PRF-49470 Frequency Response Curves

10 μ F, 50 Volt M49470X01106_A_
Presidio Part Number: S405BX106_2_4



Visit our library of Power Supply Capacitors Frequency Response Curves.
All graphs are in PDF format for easy viewing.

