

**HIGH RELIABILITY EXTENDED RANGE
CHIP CAPACITORS FOR SPACE**

*Now Including
Low Inductance
0306, 0508,
0612 & 0912*



HIGH RELIABILITY EXTENDED RANGE CHIP CAPACITORS

FORMERLY THE PRESIDIO COMPONENTS, INC. “#M123” DRAWING

For space flight applications that require the highest level of reliability, Presidio recommends its high reliability extended range chip capacitors. Tested to the requirements of MIL-PRF-123, Presidio manufactures these chips on the same manufacturing line as its military products. Please note these capacitors are NOT MIL-qualified. Unless noted in the data sheet, the parts do meet the MIL-PRF-123 design requirements for dielectric thickness and electrode composition. All parts are manufactured with PRECIOUS METAL ELECTRODES.

QUALITY ASSURANCE PROVISIONS

Every lot undergoes the following inspection and tests.

DESTRUCTIVE PHYSICAL ANALYSIS (DPA) — A representative sample is pulled from each lot and examined per EIA RS469 and to verify adherence to Presidio’s design criteria. Sample size is per MIL-PRF-123.

ULTRASONIC SCANNING SAMPLE — This screening sample will be performed on lots to assure the highest quality microstructure. 100% ultrasonic scanning is not required for each lot, and must be specified on the customer order. Separate charge applies for 100% ultrasonic scanning.

THERMAL SHOCK — All parts are temperature cycled for 20 cycles to MIL-STD-202 Method 107, Condition A, except that max temperature is 125°C.

VOLTAGE CONDITIONING — All parts receive a voltage conditioning at 2X rated voltage and 125°C for a minimum of 168 hours and a maximum of 264 hours. Voltage Conditioning may be terminated at any time between 168 and 264 hour time interval that failures are less than .1% or 1 piece during the last 48 hours of the test. Method follows MIL-PRF-123. Resistors, instead of fuses are acceptable.

INSULATION RESISTANCE (IR @ 125°C) — All parts are tested at 125°C and Rated Voltage in accordance with Method 302 of MIL-STD-202. The minimum IR required is 10,000 Megohms or 100 Megohm-Microfarads.

DIELECTRIC WITHSTANDING VOLTAGE (DWV) — All parts are tested at 2.5X rated voltage in accordance with Method 301 of MIL-STD-202.

INSULATION RESISTANCE (IR @ 25°C) — All parts are tested at 25°C and Rated Voltage in accordance with Method 302 of MIL-STD-202. The minimum IR required is 100,000 Megohms or 1,000 Megohm-Microfarads.

CAPACITANCE — All parts are tested at 25°C and 1VACRMS in accordance with Method 305 of MIL-STD-202.

DISSIPATION FACTOR (DF) — See following table:

Voltage Rating	NPO	X7R
5/10	N/A	5%
16/25	.15%	3.5%
≥ 50	.15%	2.5%

PERCENT DEFECTIVE ALLOWED (PDA) — The cumulative PDA after Voltage Conditioning is 5%. Pieces rejected as out of tolerance for capacitance or visual screening will be removed from the lot but not counted in the PDA calculation.

VISUAL — A 100% inspection is performed IAW MIL-PRF-123 Appendix B.

MECHANICAL — Level 1 AQL 1% in accordance with MIL-PRF-123.

*** THERMAL SHOCK AND LIFE TEST —** A sample is pulled from each lot. 100 Thermal shock cycles are performed and Life Test is performed for 1000 hours at 2X rated voltage and 125°C. Sample size and method follows MIL-PRF-123.

*** HUMIDITY, STEADY STATE, LOW VOLTAGE —** A sample of 12 pieces is pulled from each lot and tested per MIL-PRF-123.

MARKING (Optional for sizes 0805 and larger only) — Parts will not be marked unless marking is specified on the PO. If marking is specified, a color letter will be used per Presidio’s chip marking system.

STANDARD PACKAGING

Product will be packaged in individual waffle trays. Tape and reel option is available.

DATA PACKAGE

Data will be sent with each shipment including:

- CERTIFICATE of COMPLIANCE
- DPA REPORT
- GROUP A & B ATTRIBUTE DATA SHEET
- LIFE TEST AND HUMIDITY VARIABLES DATA SHEET.

* Group B required for flight parts. Parts for engineering models may be subject to lesser screening requirements.

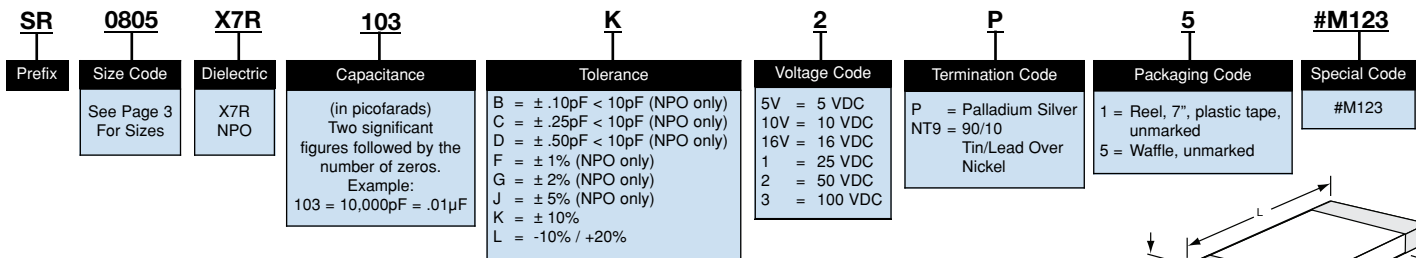
EXAMPLE PART NUMBER

SR0805X7R103K2P5#M123

Add “#M123” to the end of the standard Presidio part number.
See “HOW TO ORDER” below.

HOW TO ORDER

EXAMPLE: SR0805X7R103K2P5#M123



HIGH RELIABILITY EXTENDED RANGE CHIP CAPACITORS

FOR SPACE FLIGHT APPLICATIONS

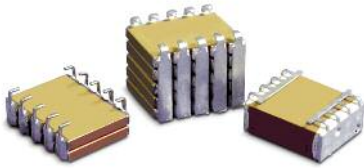
SIZE	L inches (mm)	W inches (mm)	THICKNESS MAX (T) inches (mm)	METALIZATION BAND (M.B.) inches (mm)	WVDC	DIELECTRIC (MAXIMUM CAPACITANCE)			
						NPO		X7R	
0402	0.040 (1.02) ± 0.004 (0.10)	0.020 (0.51) ± 0.004 (0.10)	0.024 (0.61)	.004 (0.10) min. band .015 (0.38) min. space	5 V			0.01 µF	N
					10 V			8200 pF	N
					16 V			6800 pF	N
					25 V	120 pF	Y	4700 pF	Y
					50 V	100 pF	Y	3900 pF	Y
0403	0.040 (1.02) ± 0.010 (0.25)	0.030 (0.76) ± 0.010 (0.25)	0.030 (0.76)	.004 (0.10) min. band .015 (0.38) min. space	100 V	39 pF	Y	1200 pF	Y
					16 V			0.022 µF	N
					25 V	390 pF	Y	0.015 µF	Y
					50 V	330 pF	Y	0.012 µF	Y
0504	0.050 (1.27) ± 0.010 (0.25)	0.040 (1.02) ± 0.010 (0.25)	0.040 (1.02)	.005 (0.13) min. band .015 (0.38) min. space	100 V	68 pF	Y	2200 pF	Y
					16 V			0.082 µF	N
					25 V	1500 pF	Y	0.047 µF	Y
					50 V	1200 pF	Y	0.039 µF	Y
New! Low Inductance 0306	0.032 (0.81) ± 0.008 (0.20)	0.063 (1.60) ± 0.008 (0.20)	0.033 (0.84)	.005 (0.13) min. band .010 (0.25) min. space	5 V			0.10 µF	N
					16 V			0.039 µF	N
					25 V			0.022 µF	Y
0603	0.063 (1.60) ± 0.006 (0.15)	0.032 (0.81) ± 0.006 (0.15)	0.035 (0.89)	.005 (0.13) min. band .025 (0.64) min. space	100 V	100 pF	Y	3300 pF	Y
					5 V			0.10 µF	N
					16 V			0.043 µF	N
					25 V	680 pF	Y	0.027 µF	Y
New! Low Inductance 0508	0.050 (1.27) ± 0.010 (0.25)	0.080 (2.03) ± 0.010 (0.25)	0.045 (1.14)	.005 (0.13) min. band .020 (0.51) min. space	100 V	100 pF	Y	3300 pF	Y
					10 V			0.12 µF	N
					16 V			0.10 µF	N
0805	0.080 (2.03) ± 0.010 (0.25)	0.050 (1.27) ± 0.010 (0.25)	0.050 (1.27)	0.020 (0.51) ± 0.010 (0.25)	100 V	560 pF	Y	0.022 µF	Y
					16 V			0.15 µF	N
					25 V	2700 pF	Y	0.10 µF	Y
					50 V	2200 pF	Y	0.082 µF	Y
New! Low Inductance 0612	0.063 (1.60) ± 0.010 (0.25)	0.126 (3.20) ± 0.010 (0.25)	0.055 (1.40)	.005 (0.13) min. band .025 (0.64) min. space	16 V			0.27 µF	N
					25 V			0.22 µF	Y
1206	0.126 (3.20) ± 0.008 (0.20)	0.063 (1.60) ± 0.008 (0.20)	0.059 (1.50)	0.020 (0.51) ± 0.010 (0.25)	100 V	1500 pF	Y	0.068 µF	Y
					16 V			0.39 µF	N
					25 V	6800 pF	Y	0.27 µF	Y
					50 V	5600 pF	Y	0.22 µF	Y
1209	0.125 (3.18) ± 0.010 (0.25)	0.095 (2.41) ± 0.010 (0.25)	0.065 (1.65)	0.020 (0.51) ± 0.010 (0.25)	100 V	3900 pF	Y	0.15 µF	Y
					16 V			0.68 µF	N
					25 V	0.010 µF	Y	0.47 µF	Y
					50 V	8200 pF	Y	0.39 µF	Y
New! Low Inductance 0912	0.095 (2.41) ± 0.010 (0.25)	0.126 (3.20) ± 0.010 (0.25)	0.065 (1.65)	.005 (0.13) min. band .025 (0.64) min. space	16 V			0.68 µF	N
					25 V			0.47 µF	Y
1712	0.175 (4.45) ± 0.013 (0.33)	0.125 (3.18) ± 0.010 (0.25)	0.065 (1.65)	0.020 (0.51) ± 0.010 (0.25)	100 V	6800 pF	Y	0.27 µF	Y
					16 V			1.2 µF	N
					25 V	0.022 µF	Y	1.0 µF	Y
					50 V	0.015 µF	Y	0.68 µF	Y
1725	0.175 (4.45) ± 0.013 (0.33)	0.250 (6.35) ± 0.018 (0.46)	0.065 (1.65)	0.020 (0.51) ± 0.010 (0.25)	100 V	0.018 µF	Y	0.68 µF	Y
					16 V			3.3 µF	N
					25 V	0.056 µF	Y	2.2 µF	Y
					50 V	0.039 µF	Y	1.8 µF	Y
2225	0.220 (5.59) ± 0.015 (0.38)	0.250 (6.35) ± 0.018 (0.46)	0.080 (2.03)	0.020 (0.51) ± 0.010 (0.25)	100 V	0.027 µF	Y	1.0 µF	Y
					16 V			3.9 µF	N
					25 V	0.068 µF	Y	3.3 µF	Y
					50 V	0.056 µF	Y	2.2 µF	Y
MIL-PRF-123 MINIMUM DIELECTRIC THICKNESS COMPLIANT:					0.8 mils for 50V 1.0 mils for 100 V	YES/NO		YES/NO	



PRESIDIO COMPONENTS, INC.

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PRESIDIO CUSTOM PRODUCTS



CUSTOM LEADS

PRESIDIO COMPONENTS, INC. maintains more than 70 million standard commercial and military parts in inventory. If you need a custom product, call our engineering team.

Custom products include non-standard part sizes and voltages such as high voltage, high temperature, high "Q", custom leads, cryogenic ceramics, negative and positive temperature characteristic ceramics, and piezoelectric formulations. European sizes are also available.

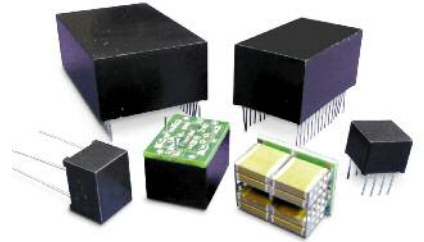
Backed with numerous patents and hundreds of years of combined experience, Presidio's engineering team is ready and able to create the ideal solution for any application.



'S' LEADS



CUSTOM STACKED CUSTOM ASSEMBLY



ENCAPSULATED



HIGH TEMP DOWNHOLE OIL

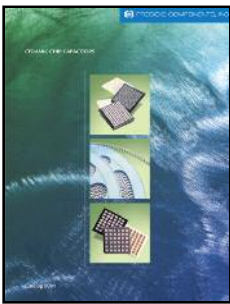


POWER-STACK™ CAPACITORS



HIGH FREQUENCY HIGH POWER

MAIN PRODUCT CATALOGS



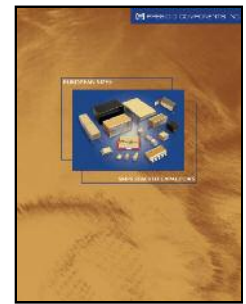
CERAMIC CHIP CAPACITORS



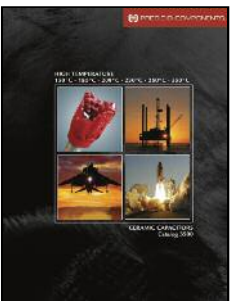
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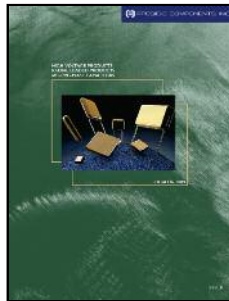
SMPS STACKED CAPACITORS



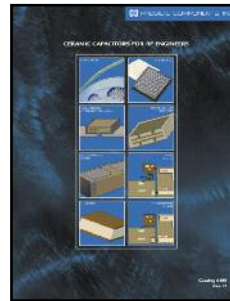
EUROPEAN SIZES SMPS STACKED CAPACITORS



HIGH TEMPERATURE CERAMIC CAPACITORS



HIGH VOLTAGE & RADIAL LEADED PRODUCTS MIL-PRF-49467 CAPACITORS



CERAMIC CAPACITORS FOR RF, MICROWAVE & FIBER OPTIC APPLICATIONS



ULTRA-PORCELAIN RF CAPACITORS

 **PRESIDIO COMPONENTS, INC.**

NOVEMBER 2011

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