

HIGH RELIABILITY “SR” CAPACITORS (TESTED SIMILARLY TO MIL-PRF-123-GROUP A)

For applications that require the highest level of reliability, Presidio recommends its high reliability “SR” capacitors. Tested similarly to MIL-PRF-123 Group A, Presidio manufactures these chips on the same manufacturing line as its military product line. They may be used in both military and space applications. Please note these capacitors are NOT MIL-qualified.

QUALITY ASSURANCE PROVISIONS

Every lot undergoes the following inspection and tests:

- a) **Destructive Physical Analysis (DPA)** — A representative sample is pulled from each lot and examined per relevant sections of EIA 469 and to verify adherence to Presidio’s internal design criteria. Sample size is per MIL-PRF-123.
- b) **Ultrasonic Scanning (optional)** — This screening may be performed on lots to assure the highest quality microstructure. Ultrasonic scanning is not required for each lot, and must be specified on the customer purchase order.
- c) **Thermal Shock** — All parts are temperature cycled for 20 cycles in accordance with MIL-PRF-123.
- d) **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 intervals when failures are less than .1% or 1 piece, during the last 48 hours of the test. Tested in accordance with MIL-PRF-123 except resistors are used in place of fuses.
- e) **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.
- f) **Dielectric Withstanding Voltage (DWV)** — All parts are tested at 2.5X rated voltage in accordance with Method 301 of MIL-STD-202, or according to EIA/MIL Standards.
- g) **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.
- h) **Capacitance** — All parts are tested at 25°C and 1VACRMS in accordance with Method 305 of MIL-STD-202.
- i) **Dissipation Factor (DF)** — See following table:

Voltage Rating	NPO	BX/BR	X7R
10	N/A	5.0%	7.5%
16	.15%	5.0%	7.5%
25	.15%	3.5%	5.0%
50	.15%	2.5%	3.5%
> 50	.15%	2.5%	2.5%

- j) **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.
- k) **Visual** — Performed on pieces in accordance with MIL-PRF-123 Appendix B.
- l) **Mechanical** — Level 1 AQL 1% in accordance with MIL-PRF-123.
- m) **Operating Temperature Range:** –55°C to +125°C
- n) **(Optional) Class K Element Evaluation per MIL-PRF-38534 Rev L** — Must be specified on the RFQ and Purchase Order (charge will apply). Data package included.

STANDARD PACKAGING

Product will be packaged in individual waffle trays or tape and reel as specified by customer.

DATA PACKAGE

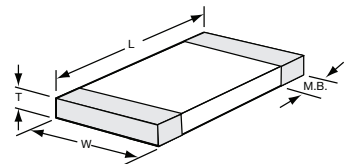
Data will be sent with each shipment including:

- a) **Certificate of Compliance** — Certificate of Compliance and attributes test data sheet will be sent with each shipment.
- b) **(Optional) Destructive Physical Analysis Report** — Destructive Physical Analysis (DPA) report and photographs for each lot will be sent. Extra charge may apply.
- c) **(Optional) Class K Element Evaluation per MIL-PRF-38534 Rev L** — Must be specified on the RFQ and Purchase Order (charge will apply). Data package included.
- d) **(Optional) Ultrasonic Examination** — An ultrasonic scanning report will be included. Must be specified on the RFQ and Purchase Order (charge will apply).

EXAMPLE PART NUMBER
SR0402X7R104LENT91

Add “SR” to the beginning of the standard Presidio part number. See Page 3 “HOW TO ORDER A STANDARD PART”

Visit Presidio’s website for additional technical information on these products.



HIGH RELIABILITY "SR" CAPACITORS

SIZE	L inches (mm)	W inches (mm)	THICKNESS MAX. (T) inches (mm)	METALIZATION BAND (M.B.) inches (mm)	WVDC	DIELECTRIC		
						NPO	BX	X7R
0402	0.040 (1.02) ± 0.004 (0.10)	0.020 (0.51) ± 0.004 (0.10)	0.024 (0.61)	0.004 (0.10) min. band 0.015 (0.38) min. space	10 V	390 pF	N/A	0.100 µF
					16 V	200 pF	1200 pF	0.010 µF
					25 V	120 pF	820 pF	4700 pF
					50 V	100 pF	560 pF	3900 pF
0403	0.040 (1.02) ± 0.010 (0.25)	0.030 (0.76) ± 0.010 (0.25)	0.03 (0.76)	0.004 (0.10) min. band 0.015 (0.38) min. space	10 V	1200 pF	N/A	0.047 µF
					16 V	560 pF	3300 pF	0.022 µF
					25 V	390 pF	2200 pF	0.015 µF
					50 V	330 pF	1500 pF	0.012 µF
0504	0.050 (1.27) ± 0.010 (0.25)	0.040 (1.02) ± 0.010 (0.25)	0.04 (1.02)	0.005 (0.13) min. band 0.015 (0.38) min. space	10 V	2700 pF	N/A	0.12 µF
					16 V	1800 pF	6800 pF	0.082 µF
					25 V	1500 pF	5600 pF	0.047 µF
					50 V	1200 pF	3900 pF	0.039 µF
0603	0.063 (1.60) ± 0.006 (0.15)	0.032 (0.81) ± 0.006 (0.15)	0.035 (0.89)	0.005 (0.13) min. band 0.025 (0.64) min. space	10 V	2200 pF	N/A	0.22 µF
					16 V	1000 pF	4700 pF	0.10 µF
					25 V	680 pF	3300 pF	0.027 µF
					50 V	560 pF	2200 pF	0.022 µF
0805	0.080 (2.03) ± 0.010 (0.25)	0.050 (1.27) ± 0.010 (0.25)	0.055 (1.40)	0.020 (0.51) ± 0.010 (0.25)	10 V	4700 pF	N/A	1.0 µF
					16 V	3300 pF	0.022 µF	0.22 µF
					25 V	2700 pF	0.018 µF	0.10 µF
					50 V	2200 pF	0.010 µF	0.10 µF
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)	10 V	0.012 µF	N/A	1.8 µF
					16 V	8200 pF	0.082 µF	0.39 µF
					25 V	6800 pF	0.056 µF	0.27 µF
					50 V	5600 pF	0.039 µF	0.22 µF
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)	10 V	0.018 µF	N/A	2.7 µF
					16 V	0.012 µF	0.22 µF	0.68 µF
					25 V	0.010 µF	0.18 µF	0.47 µF
					50 V	8200 pF	0.12 µF	0.39 µF
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)	10 V	0.039 µF	N/A	1.8 µF
					16 V	0.027 µF	0.33 µF	1.2 µF
					25 V	0.022 µF	0.22 µF	1.0 µF
					50 V	0.015 µF	0.18 µF	0.68 µF
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)	10 V	0.082 µF	N/A	3.9 µF
					16 V	0.068 µF	0.82 µF	3.3 µF
					25 V	0.056 µF	0.56 µF	2.2 µF
					50 V	0.039 µF	0.47 µF	1.8 µF
2225	0.220 (5.59) ± 0.015 (0.38)	0.250 (6.35) ± 0.018 (0.46)	0.08 (2.03)	0.020 (0.51) ± 0.010 (0.25)	10 V	0.10 µF	N/A	4.7 µF
					16 V	0.082 µF	1.2 µF	3.9 µF
					25 V	0.068 µF	1.0 µF	3.3 µF
					50 V	0.056 µF	0.68 µF	2.2 µF
2225	0.220 (5.59) ± 0.015 (0.38)	0.250 (6.35) ± 0.018 (0.46)	0.08 (2.03)	0.020 (0.51) ± 0.010 (0.25)	100 V	0.027 µF	0.33 µF	1.0 µF

Note: Above parts are tested similarly to MIL-PRF-123 Group A only.
 Presidio has the ability to add Group B for space applications. Call the factory for more information.

HOW TO ORDER HIGH RELIABILITY "SR" CAPACITORS (See p. 3, Example: SR0402X7R104LENT91)

SR	0402	X7R	104	L	E	NT9	1	—
Prefix	Case Size	Dielectric Code	Capacitance Code 0.1 µF	Tolerance Code -10% / +20%	Voltage Code 10 V	Termination Code Ni/SnPb	Marking & Packaging Reel, unmarked	Blank = Non-RoHS R = RoHS Compliant



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