

SNR / SXR

High Voltage, High Reliability DC COG (NPO)/X7R Chip Capacitors

Features

- Capacitance Range: 10pF to 5.6μF
- Operating Temperature Range: -55°C to 125°C
- Voltage Range: 500 Volt to 10KV
- COG (NPO) and X7R Dielectric

SNR/SXR series is high voltage multilayer ceramic chip capacitors for use in high reliability commercial, industrial and military applications. These

capacitors are designed in accordance with MIL-PRF-49467 and can be supplied to NPO and X7R voltage temperature limits. Each capacitor is 100% tested physically and electrically* and can be screened to Group A and B performance criteria as defined in MIL-PRF-49467. Custom designs, extended thickness and test protocols to customer Source Control Drawings (SCD's) are available upon request.



Applications

Typical applications include filtering of high voltage power supplies, high voltage multipliers, transient protection and noise suppression.

* See Test Option pages at the end of the catalog.

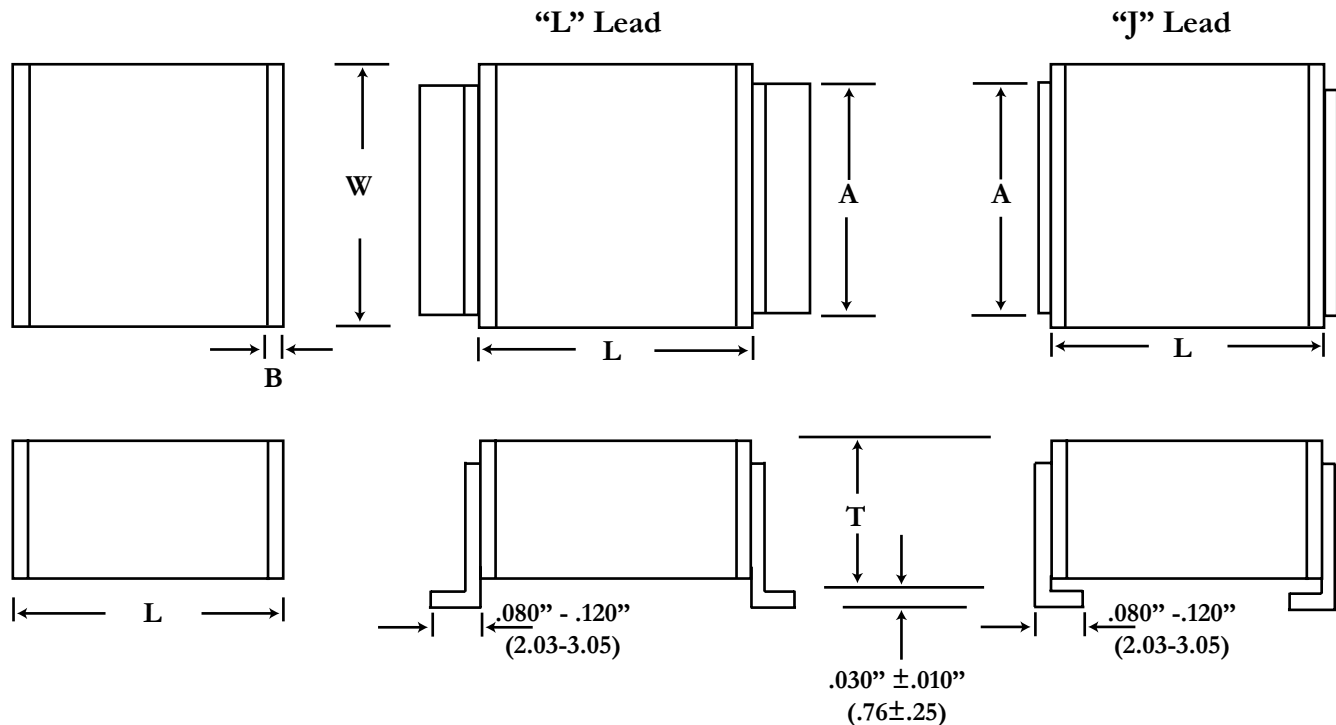
AFM Part Number Code

<p>S</p> <p>Product Series: S: Surface Mount</p>	<p>N</p> <p>Product Type: R: Chip</p>	<p>R</p> <p>Termination Code: C: Pd/Ag Term J: J Lead L: L Lead T: Ag Term, Ni Barrier 100 Sn plated W: Ag Term, Ni Barrier, 90/10 Sn/Pb Plated</p>	<p>15</p> <p>Capacitance Code: 1st two digits are significant; Third digit denotes number of zero(s); R=Decimal point 2R0=2.0pF 101=100pF</p>	<p>W</p> <p>Tolerance: J: ±5% K: ±10% M: ±20%</p>	<p>101</p> <p>Voltage: J: 500 Vdc L: 1000 Vdc O: 2000 Vdc Q: 3000 Vdc S: 4000 Vdc T: 5000 Vdc W: 10000 Vdc</p>	<p>J</p> <p>Test Code: C: Commercial Test S: Special (Customer Defined) M: Hi-Rel</p>	<p>L</p> <p>Marking: B: Not Marked M: Marked (per description) S: Special Marking</p>	<p>C</p> <p>Dielectrics: N: NPO X: X7R</p>	<p>B</p> <p>Packaging: B: Bulk T: Tape & Reel W: Waffle Pack</p>	<p>B</p> <p>Size: (See Table)</p>
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Chip Capacitor Dimensions and Tolerances

Style	Length (L) Inches (mm)	Width (W) Inches (mm)	Thickness (T) (Max) Inches (mm)	Termination Band (B) Inches (mm)	Tab (A) Inches (mm)
15	.150 ±.015 (3.81 ±.38)	.150 ± .015 (3.81 ±.38)	.140 (3.56)	.020 (.508)	.100 (2.54)
20	.200 ±.020 (5.08 ±.51)	.200 ± .020 (5.08 ±.51)	.180 (4.57)	.020 (.508)	.100 (2.54)
25	.250 ±.020 (6.35 ±.51)	.200 ± .020 (5.08 ±.51)	.180 (4.57)	.020 (.508)	.100 (2.54)
35	.350 ±.030 (8.89 ±.76)	.300 ± .030 (7.62 ±.76)	.220 (5.59)	.020 (.508)	.200 (5.08)
40	.400 ±.030 (10.16±.76)	.400 ± .030 (10.16±.76)	.220 (5.59)	.020 (.508)	.200 (5.08)
45	.450 ±.030 (11.43±.76)	.400 ± .030 (10.16±.76)	.220 (5.59)	.020 (.508)	.300 (7.62)
55	.550 ±.030 (13.97±.76)	.500 ± .030 (12.70±.76)	.220 (5.59)	.020 (.508)	.400 (10.16)
65	.650 ±.030 (16.51±.76)	.600 ± .030 (15.24±.76)	.220 (5.59)	.020 (.508)	.500 (12.70)
70	.700 ±.030 (17.78±.76)	.300 ± .030 (7.62±.76)	.220 (5.59)	.020 (.508)	.200 (5.08)
90	.900 ±.030 (22.86±.76)	.400 ±.030 (10.16±.76)	.220 (5.59)	.020 (.508)	.300 (7.62)
95	1.100 ±.030 (27.94±.76)	.500 ±.030 (12.70±.76)	.220 (5.59)	.020 (.508)	.400 (10.16)
99	1.350 ±.030 (34.29±.76)	.600 ±.030 (15.24±.76)	.220 (5.59)	.020 (.508)	.500 (12.70)

Outline Drawings and Lead Configurations



COG (NPO) Dielectric Capacitance Ranges

Style	500 Vdc		1000 Vdc		2000 Vdc		3000 Vdc		4000 Vdc		5000 Vdc		10,000 Vdc	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
15	27pF	4700pF	27pF	1500pF	12pF	680pF	10pF	150pF						
20	39pF	8200pF	39pF	3900pF	22pF	820pF	22pF	560pF	22pF	390pF				
25	47pF	.010μF	47pF	6800pF	27pF	1200pF	27pF	680pF	27pF	470pF				
35	120pF	.022μF	120pF	.018μF	47pF	3300pF	47pF	1500pF	27pF	680pF				
40	220pF	.039μF	220pF	.022μF	100pF	5600pF	100pF	2200pF	18pF	1200pF				
45	220pF	.056μF	220pF	.033μF	100pF	6800pF	100pF	3900pF	18pF	1500pF	18pF	1000pF		
55	390pF	.068μF	390pF	.047μF	150pF	.010μF	150pF	6800pF	27pF	2200pF	27pF	2200pF		
65	470pF	.100μF	470pF	.068μF	270pF	.022μF	220pF	8200pF	47pF	3900pF	47pF	2700pF		
70	330pF	.120μF	330pF	.068μF	68pF	.010μF	68pF	4700pF	27pF	1500pF	27pF	1200pF		
90	470pF	.150μF	390pF	.056μF	120pF	.015μF	100pF	5600pF	56pF	3300pF	47pF	2200pF	18pF	1200pF
95	680pF	.220μF	680pF	.100μF	150pF	.022μF	150pF	.012μF	68pF	4700pF	68pF	2700pF	27pF	1500pF
99	1000pF	.330μF	1000pF	.150μF	270pF	.039μF	270pF	.018μF	120pF	8200pF	120pF	5600pF	56pF	2200pF

Dielectric Characteristics COG (NPO)

Capacitance Range	10pF to .330μF
Capacitance Tolerances	J±5%, K±10%, M±20%
Dissipation Factor	0.15% Max (25°C, 1 KHz) 1Vrms ±0.2V
Temperature Range	-55°C to +125°C
Temperature Coefficient	0±30ppm/°C
Insulation Resistance 1000 V or Rated V (Whichever is less) at 25°C	100GΩ min or 1000MΩμF Whichever is Less
Insulation Resistance 1000 V or Rated V (Whichever is less) at 125°C	10GΩ min or 100MΩμF Whichever is Less
Voltage Range	500V to 10kV (See Table)
Dielectric Withstand	1.2 x Rated Voltage 5 Second Min
Aging	None

Optional Marking

Styles 15 and 20 will be marked with EIA capacitance code, and tolerance (821K). Styles 25 and up will be marked with an insulating ink and will contain AFM, capacitance code, tolerance, lot code, voltage and series style.

Packaging

Bulk packaging in plastic bags is standard. Please contact factory for optional waffle packaging or tape and reel.

X7R Dielectric Capacitance Ranges

Style	500 Vdc		1000 Vdc		2000 Vdc		3000 Vdc		4000 Vdc		5000 Vdc		10,000 Vdc	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
15	680pF	.082μF	680pF	.022μF	270pF	3900pF								
20	1200pF	.180μF	1200pF	.068μF	560pF	8200pF	560pF	3900pF						
25	1200pF	.220μF	1200pF	.082μF	680pF	.018μF	680pF	5600pF						
35	3300pF	.560μF	3300pF	.270μF	1200pF	.033μF	1200pF	.015μF	270pF	6800pF				
40	6800pF	.860μF	6800pF	.390μF	2700pF	.047μF	2700pF	.018μF	470pF	8600pF				
45	6800pF	1.20μF	6800pF	.470μF	2700pF	.068μF	2700pF	.033μF	470pF	.010μF	470pF	6800pF		
55	.010μF	1.80μF	.010μF	.820μF	3900pF	.120μF	3900pF	.039μF	680pF	.015μF	680pF	.010μF		
65	.015μF	2.50μF	.015μF	1.00μF	6800pF	.180μF	6800pF	.082μF	1200pF	.027μF	1200pF	.015μF		
70	.010μF	1.50μF	.010μF	.560μF	1800pF	.082μF	1800pF	.027μF	680pF	.012μF	680pF	6800pF		
90	.012μF	2.20μF	.012μF	.820μF	3300pF	.150μF	3300pF	.047μF	1200pF	.027μF	1200pF	.022μF	470pF	3900pF
95	.018μF	3.00μF	.018μF	1.50μF	4700pF	.270μF	3900pF	.082μF	2200pF	.039μF	2200pF	.027μF	680pF	5600pF
99	.027μF	5.60μF	.027μF	2.20μF	8200pF	.390μF	5600pF	.120μF	3300pF	.056μF	3300pF	.039μF	1200pF	.010μF

Dielectric Characteristics X7R

Capacitance Range	270pF to 5.6μF
Capacitance Tolerances	J±5%, K±10%, M±20%
Dissipation Factor	2.5% Max (25°C, 1 KHz) 1Vrms ±0.2V
Temperature Range	-55°C to +125°C
Temperature Coefficient	±15%
Insulation Resistance 1000 V or Rated V (Whichever is less) at 25°C	100GΩ min or 1000MΩμF Whichever is Less
Insulation Resistance 1000 V or Rated V (Whichever is less) at 125°C	10GΩ min or 100MΩμF Whichever is Less
Voltage Range	500V to 10kV (See Table)
Dielectric Withstand	1.2 x Rated Voltage 5 Second Min
Aging	None

Optional Marking

Styles 15 and 20 can be marked with EIA capacitance code, and tolerance (821K). Styles 25 and up will be marked with an insulating ink and will contain AFM, capacitance code, tolerance, lot code, voltage and series style.

Packaging

Bulk packaging in plastic bags is standard. Please contact factory for optional waffle packaging or tape and reel.