

# SNT / SXT

High Voltage, High Reliability 200°C "T" Series  
DC COG (NPO)/X7R Ceramic Chip Surface Mount Capacitors

## Features

- Capacitance Range: 10pF to 2.7μF
- Operating Temperature Range: -55°C to 200°C
- Voltage Range: 500V to 5kV
- COG (NPO) and X7R Dielectric



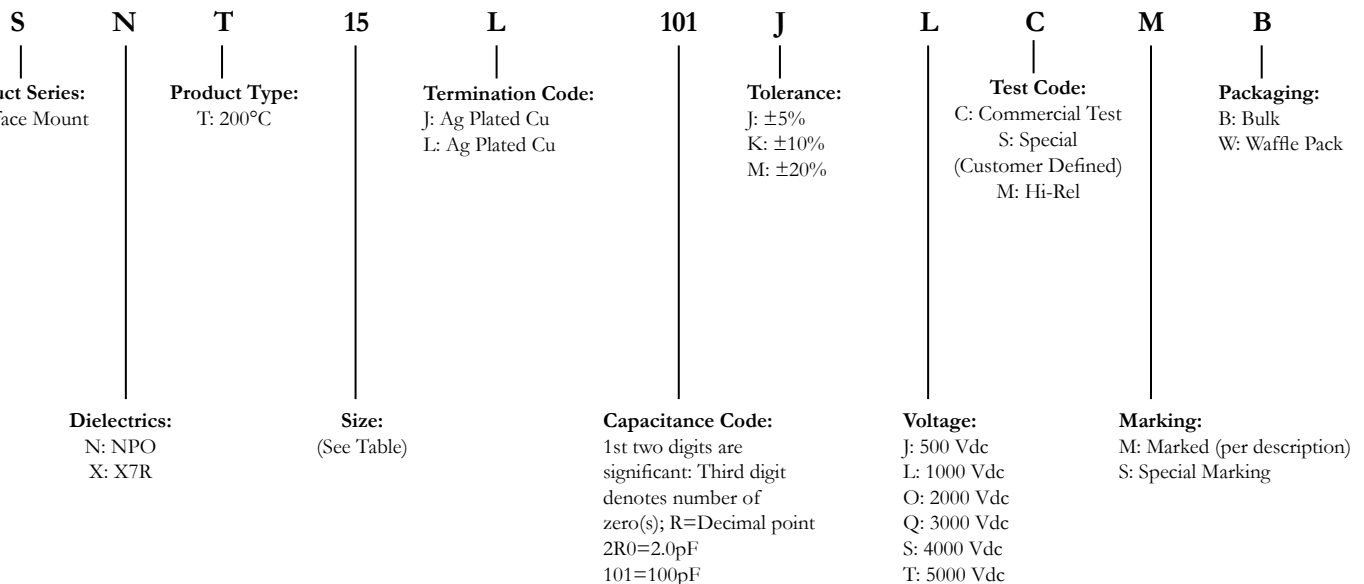
SNT/SXT series is high voltage multilayer ceramic surface mount capacitors for use in severe environment with operating temperatures up to 200°C. These ruggedized capacitors are encapsulated with unique polymer/ceramic system which enables them to operate reliably in high shock and vibrational environment and also to prevent corona (partial discharges) during operation. 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. AFM has extensive electrical and environmental test capability with component burn-in and characterization up to 300°C. Custom designs, extended thickness and test protocols to customer Source Control Drawings (SCD's) are available on request.

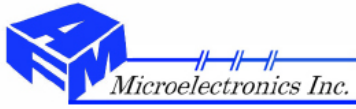
## Applications:

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

\*See Test Options Pages at the End of the Catalog.

## AFM Part Number Code





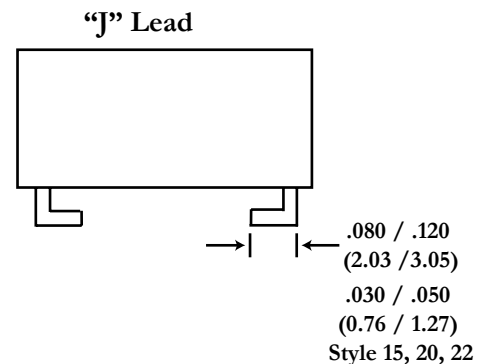
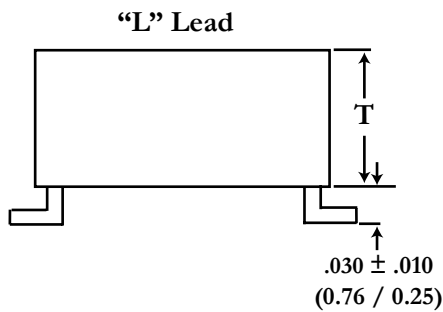
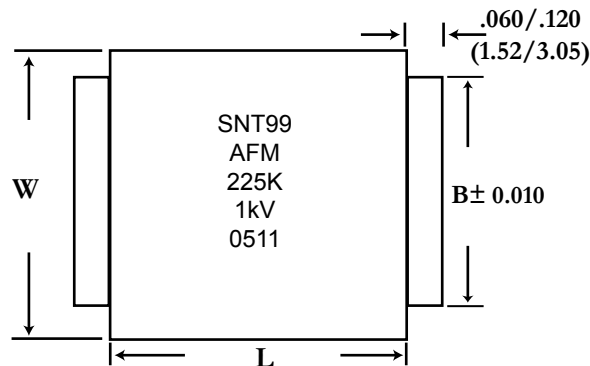
# SNT / SXT

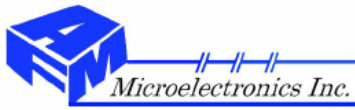
High Voltage, High Reliability 200°C "T" Series  
DC COG (NPO)/X7R Ceramic Chip Surface Mount Capacitors

## Capacitor Dimensions and Tolerances

Style	Length (L) Inches (mm)	Width (W) Inches (mm)	Thickness (T) Max Inches (mm)	Tab (B) Inches (mm)
15	.225 ±.015 (5.72 ±.38)	.225 ±.015 (5.72 ±.38)	.160 (4.06)	.100 (2.54)
20	.275 ±.015 (6.99 ±.38)	.275 ±.015 (6.99 ±.38)	.210 (5.33)	.100 (2.54)
25	.330 ±.015 (8.38 ±.38)	.255 ±.015 (6.48 ±.38)	.210 (5.33)	.100 (2.54)
35	.450 ±.020 (11.43 ±.51)	.370 ±.020 (9.40 ±.51)	.255 (6.48)	.200 (5.08)
40	.500 ±.020 (12.70±.51)	.500 ±.020 (12.70±.51)	.255 (6.48)	.200 (5.08)
45	.550 ±.020 (13.97±.76)	.500 ±.020 (12.70±.51)	.255 (6.48)	.300 (7.62)
55	.650 ±.030 (16.51±.76)	.600 ±.030 (15.24±.51)	.255 (6.48)	.400 (10.16)
65	.780 ±.030 (19.81±.76)	.700 ±.030 (17.78±.76)	.260 (6.60)	.500 (12.70)
70	.800 ±.030 (20.32±.76)	.400 ±.030 (10.16±.76)	.260 (6.60)	.200 (5.08)
90	1.00 ±.030 (25.40±.76)	.500 ±.020 (12.70±.51)	.260 (6.60)	.300 (7.62)
95	1.30 ±.030 (33.02±.76)	.600 ±.030 (15.24±.76)	.260 (6.60)	.400 (10.16)
99	1.50 ±.030 (38.1±.76)	.700 ±.030 (17.78±.76)	.260 (6.60)	.500 (12.70)

## Outline Drawings and Lead Configurations





# SNT

High Voltage, High Reliability 200°C "T" Series  
DC COG (NPO) Ceramic Chip Surface Mount Capacitors

## COG (NPO) Dielectric Capacitance Ranges

Style	500 Vdc		1000 Vdc		2000 Vdc		3000 Vdc		4000 Vdc		5000 Vdc	
	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
95	680pF	.220μF	680pF	.100μF	150pF	.022μF	150pF	.012μF	68pF	4700pF	68pF	2700pF
99	1000pF	.330μF	1000pF	.150μF	270pF	.039μF	270pF	.018μF	120pF	8200pF	120pF	5600pF

## Dielectric Characteristics COG (NPO)

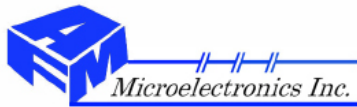
Capacitance Range	10pF to .330μF
Capacitance Tolerances	J±5%, K±10%, M±20%
Dissipation Factor	0.1% Max (25°C, 1 KHz) 1V <sub>rms</sub> ±0.2V
Temperature Range	-55°C to +200°C
Temperature Coefficient of Capacitance	0±30ppm/°C
Insulation Resistance 1000V or Rated V (whichever is less) at 25°C	100GΩ min or 1000MΩμF Whichever is Less
Insulation Resistance 1000V or Rated V (whichever is less) at 200°C	1GΩ min or 10MΩμF Whichever is less
Voltage Range	500V to 5kV
Dielectric Withstand	1.2 x Rated Voltage 5 Second Min
Aging	None

## 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.



# SXT

High Voltage, High Reliability 200°C "T" Series  
DC X7R Ceramic Chip Surface Mount Capacitors

## X7R Dielectric Capacitance Ranges

Style	500 Vdc		1000 Vdc		2000 Vdc		3000 Vdc		4000 Vdc		5000 Vdc	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
15	680pF	.047μF	680pF	.012μF	270pF	2700pF	100pF	1200pF				
20	1200pF	.100μF	1200pF	.039μF	560pF	6800pF	560pF	2700pF				
25	1200pF	.120μF	1200pF	.056μF	680pF	.012μF	680pF	4700pF				
35	3300pF	.390μF	3300pF	.180μF	1200pF	.027μF	1200pF	.010μF	270pF	4700pF		
40	6800pF	.470μF	6800pF	.220μF	2700pF	.033μF	2700pF	.012μF	470pF	6800pF		
45	6800pF	.680μF	6800pF	.270μF	2700pF	.047μF	2700pF	.018μF	470pF	6800pF	470pF	4700pF
55	.010μF	1.00μF	.010μF	.470μF	3900pF	.082μF	3900pF	.027μF	680pF	.010μF	680pF	6800pF
65	.015μF	1.50μF	.015μF	.560μF	6800pF	.120μF	6800pF	.047μF	1200pF	.012μF	1200pF	.010μF
70	.010μF	1.00μF	.010μF	.270μF	1800pF	.056μF	1800pF	.018μF	680pF	8200pF	680pF	4700pF
90	.012μF	1.50μF	.012μF	.470μF	3300pF	.120μF	3300pF	.033μF	1200pF	.012μF	1200pF	.012μF
95	.018μF	2.00μF	.018μF	.820μF	4700pF	.180μF	3900pF	.056μF	2200pF	.027μF	2200pF	.015μF
99	.027μF	2.70μF	.027μF	1.50μF	8200pF	.270μF	5600pF	.082μF	3300pF	.039μF	3300pF	.018μF

## Dielectric Characteristics X7R

Capacitance Range	100pF to 2.7μF
Capacitance Tolerances	J±5%, K±10%, M±20%
Dissipation Factor	2.5% Max (25°C, 1 KHz) 1Vrms ±0.2V, <.20% @ 200°C
Temperature Range	-55°C to +200°C
Temperature Coefficient of Capacitance	+15%, -40% to 200°C
Insulation Resistance 1000V or Rated V (whichever is less) at 25°C	10GΩ Min or 100MΩμF Whichever is Less
Insulation Resistance 1000V or Rated V (whichever is less) at 200°C	1GΩ Min or 10MΩμF Whichever is Less
Voltage Range	500V to 5kV (See Table)
Dielectric Withstand	1.2 x rated Voltage 5 Second Min
Aging	None

## 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.

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