

GENERAL INFORMATION

AVX SR Series

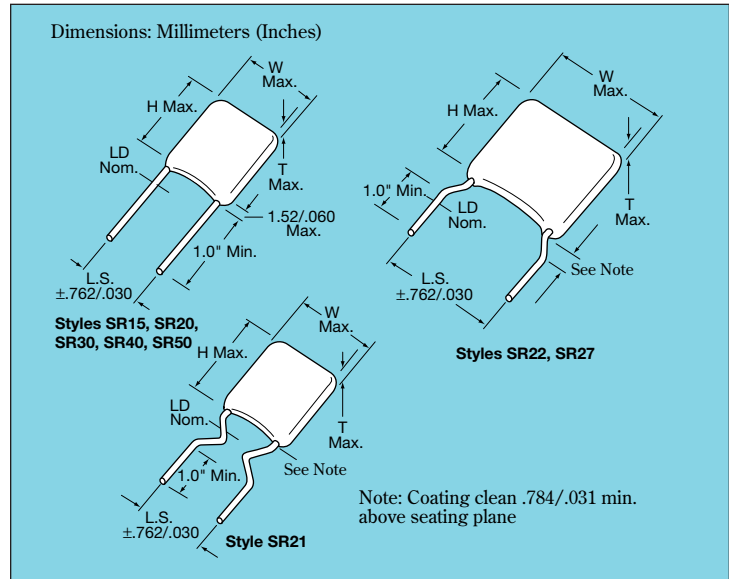
Conformally Coated Radial Leaded MLC

Temperature Coefficients: C0G (NP0), X7R, Z5U

200, 100, 50 Volts (300V, 400V & 500V also available)

Case Material: Epoxy

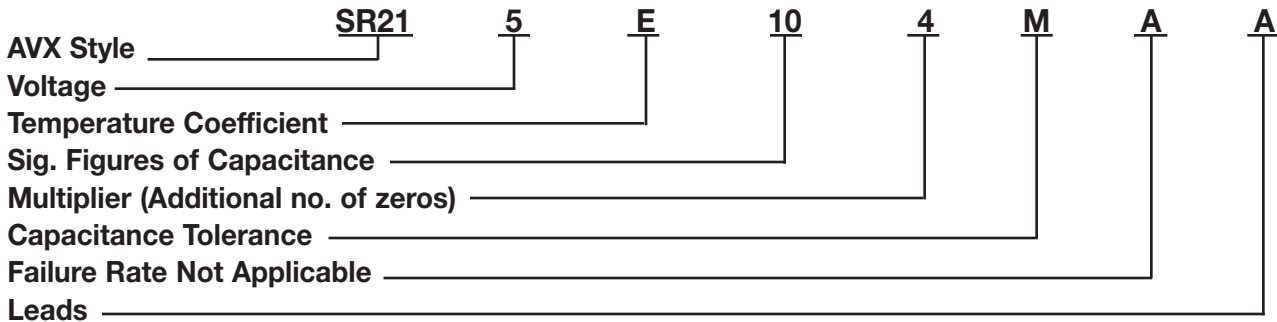
Lead Material: Solderable



HOW TO ORDER

AVX Styles: SR15, SR20, SR21, SR22, SR27, SR30, SR40, SR50

Part Number Example



Part Number Codes

Voltages: 50V = 5, 100V = 1, 200V = 2,
300V = 9, 400V = 8, 500V = 7

Temp. Coefficient: C0G (NP0) = A, X7R = C, Z5U = E

Sig. Figures of Capacitance and Multiplier:

First two digits are the significant figures of capacitance. Third digit indicates the additional number of zeros. For example, order 100,000 pF as 104. (For values below 10pF, use "R" in place of decimal point, e.g., 1R4 = 1.4 pF).

Capacitance Tolerances:

C0G (NP0): C = ±.25pF, D = ±.5pF, F = ±1.0% (>50 pF only)
G = ±2.0% (>25 pF only), J = ±5%, K = ±10%
X7R: J = ±5%, K = ±10%, M = ±20%
Z5U: M = ±20%, Z = +80%,-20%

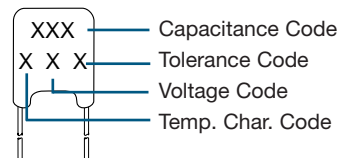
Failure Rate: A = Not Applicable

Leads: T = Trimmed Leads, .230" ± .030"

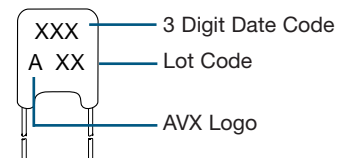
A = Long Leads, 1.0" minimum
(Other lead lengths are available, contact AVX)

MARKING

FRONT



BACK



PACKAGING REQUIREMENTS

	Quantity per Bag
SR15, 20, 21, 22, 27, 30	1000 Pieces
SR40, 50	500 Pieces

Note: SR15, SR20, SR21, SR30, and SR40 available on tape and reel per EIA specifications RS-468. See Pages 24 and 25.

C0G (NP0) Dielectric

SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

AVX Style	SR15	SR20	SR21	SR22	SR27	SR30	SR40	SR50						
AVX "Insertable"	SR07	SR29	SR59	N/A	N/A	SR65	SR75	N/A						
Width (W)	3.81 (.150)	5.08 (.200)	5.08 (.200)	5.08 (.200)	6.604 (.260)	7.62 (.300)	10.16 (.400)	12.70 (.500)						
Height (H)	3.81 (.150)	5.08 (.200)	5.08 (.200)	5.08 (.200)	6.35 (.250)	7.62 (.300)	10.16 (.400)	12.70 (.500)						
Thickness (T)	2.54 (.100)	3.175 (.125)	3.175 (.125)	3.175 (.125)	4.06 (.160)	3.81 (.150)	3.81 (.150)	5.08 (.200)						
Lead Spacing (L.S.)	2.54 (.100)	2.54 (.100)	5.08 (.200)	6.35 (.250)	7.62 (.300)	5.08 (.200)	5.08 (.200)	10.16 (.400)						
Lead Diameter (L.D.)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.635 (.025)						
Cap. in.* Industry Preferred pF Values in Blue	WVDC		WVDC		WVDC		WVDC		WVDC		WVDC		WVDC	
	200	100	50	200	100	50	200	100	50	200	100	50	100	50
1.0-9.9	SR151A1R0DAA													
10	SR151A100KAA													
15	SR.....A150KAA													
22	SR.....A220KAA													
33	SR.....A330KAA													
39	SR.....A390KAA													
47	SR.....A470KAA													
68	SR.....A680KAA													
100	SR151A101KAA													
150	SR.....A151KAA													
220	SR.....A221KAA													
330	SR.....A331KAA													
390	SR.....A391KAA													
470	SR.....A471KAA													
680	SR.....A681KAA													
1000	SR211A102KAA													
1500	SR.....A152KAA													
2200	SR.....A222KAA													
3900	SR.....A392KAA													
4700	SR.....A472KAA													
6800	SR.....A682KAA													
8200	SR.....A822KAA													
10,000	SR305A103KAA													
15,000	SR.....A153KAA													
22,000	SR.....A223KAA													
33,000	SR.....A333KAA													
39,000	SR.....A393KAA													
47,000	SR.....A473KAA													
68,000	SR.....A683KAA													
100,000	SR.....A104KAA													

For other styles, voltages, tolerances and lead lengths see Part No. Codes or contact factory.

*Other capacitance values available upon special request.

 = Industry preferred values
 = SR20 only

NOTE: Capacitance Ranges available for SR12 same as SR15
 SR62 same as SR21
 SR64 same as SR30
 SR89 same as SR21

X7R Dielectric

SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

AVX Style	SR15	SR20	SR21	SR22	SR27	SR30	SR40	SR50								
AVX "Insertable"	SR07	SR29	SR59	N/A	N/A	SR65	SR75	N/A								
Width (W)	3.81 (.150)	5.08 (.200)	5.08 (.200)	5.08 (.200)	6.604 (.260)	7.62 (.300)	10.16 (.400)	12.70 (.500)								
Height (H)	3.81 (.150)	5.08 (.200)	5.08 (.200)	5.08 (.200)	6.35 (.250)	7.62 (.300)	10.16 (.400)	12.70 (.500)								
Thickness (T)	2.54 (.100)	3.175 (.125)	3.175 (.125)	3.175 (.125)	4.06 (.160)	3.81 (.150)	3.81 (.150)	5.08 (.200)								
Lead Spacing (L.S.)	2.54 (.100)	2.54 (.100)	5.08 (.200)	6.35 (.250)	7.62 (.300)	5.08 (.200)	5.08 (.200)	10.16 (.400)								
Lead Diameter (L.D.)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.635 (.025)								
Cap. in.* Industry Preferred Values in Blue	WVDC			WVDC		WVDC		WVDC		WVDC		WVDC		WVDC		
	200	100	50	200	100	50	100	50	100	50	200	100	50	200	100	50
470																
1000																
1500																
2200																
3300																
4700																
6800																
10,000																
15,000																
22,000																
33,000																
47,000																
68,000																
100,000																
150,000																
220,000																
330,000																
390,000																
470,000																
1.0 µF																
2.2 µF																
2.7 µF																
4.7 µF																

For other styles, voltages, tolerances and lead lengths see Part No. Codes or contact factory.

*Other capacitance values available upon special request.

= Industry preferred values

= SR20 only

NOTE: Capacitance Ranges available for SR12 same as SR15
 SR62 same as SR21
 SR64 same as SR30
 SR89 same as SR21

Z5U Dielectric

SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

AVX Style	SR15	SR20	SR21	SR22	SR27	SR30	SR40	SR50
AVX "Insertable"	SR07	SR29	SR59	N/A	N/A	SR65	SR75	N/A
Width (W)	3.81 (.150)	5.08 (.200)	5.08 (.200)	5.08 (.200)	6.604 (.260)	7.62 (.300)	10.16 (.400)	12.70 (.500)
Height (H)	3.81 (.150)	5.08 (.200)	5.08 (.200)	5.08 (.200)	6.35 (.250)	7.62 (.300)	10.16 (.400)	12.70 (.500)
Thickness (T)	2.54 (.100)	3.175 (.125)	3.175 (.125)	3.175 (.125)	4.06 (.160)	3.81 (.150)	3.81 (.150)	5.08 (.200)
Lead Spacing (L.S.)	2.54 (.100)	2.54 (.100)	5.08 (.200)	6.35 (.250)	7.62 (.300)	5.08 (.200)	5.08 (.200)	10.16 (.400)
Lead Diameter (L.D.)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.635 (.025)
Cap. in.* Industry Preferred Values in Blue	WVDC 100 50	WVDC 100 50	WVDC 100 50	WVDC 100 50	WVDC 100 50	WVDC 100 50	WVDC 100 50	WVDC 100 50
10,000	SR155E103ZAA							
47,000	SR.....E473ZAA							
100,000	SR215E104ZAA							
150,000	SR.....E154ZAA							
220,000	SR215E224ZAA							
330,000	SR215E334ZAA							
470,000	SR215E474ZAA							
680,000	SR.....E684ZAA							
1.0 µF	SR.....105ZAA							
1.5 µF	SR30E155ZAA							
2.2 µF	SR30E225ZAA							
3.3 µF	SR30E335ZAA							
4.7 µF	SR30E475ZAA							

For other styles, voltages, tolerances and lead lengths see Part No. Codes or contact factory.

*Other capacitance values available upon special request.

= Industry preferred values

= SR20 only

AVX 500 VOLT SKYCAPS**

STYLE*	MAXIMUM CAPACITANCE VALUE	
	COG (NP0)	X7R
SR29	900 pF	.015 µF
SR20	1800 pF	.033 µF
SR28	900 pF	.015 µF
SR59		
SR13	1800 pF	.033 µF
SR21		
SR30	7200 pF	.12 µF
SR61		
SR65		
SR40	.015 µF	.27 µF
SR75		
SR22	1800 pF	.033 µF
SR27	1800 pF	.033 µF
SR76	.015 µF	.27 µF
SR50	.036 µF	.59 µF

*Consult pages 18 and 19 for style sizes.

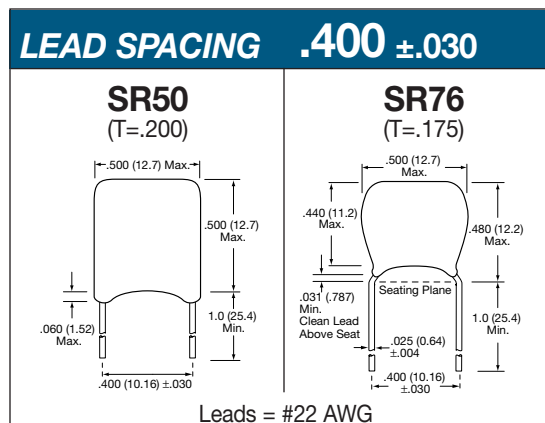
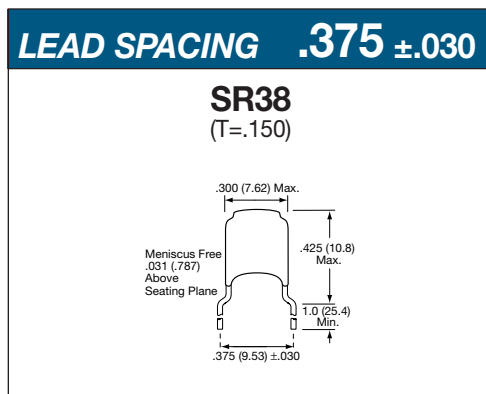
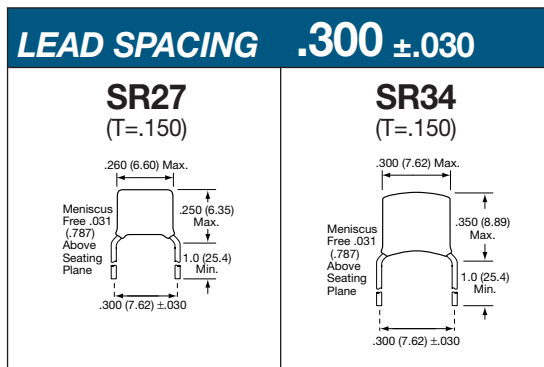
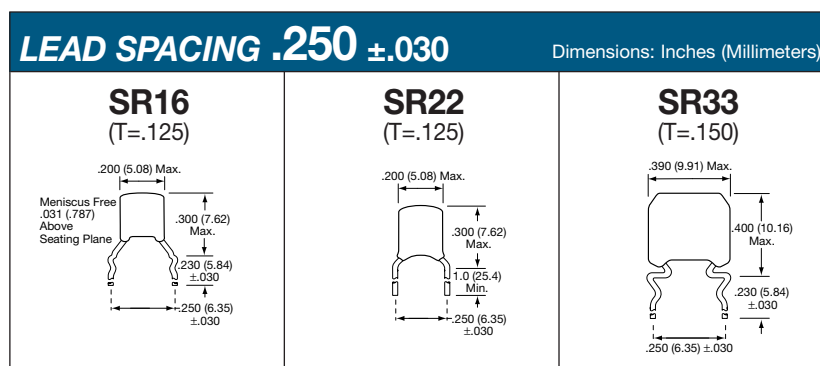
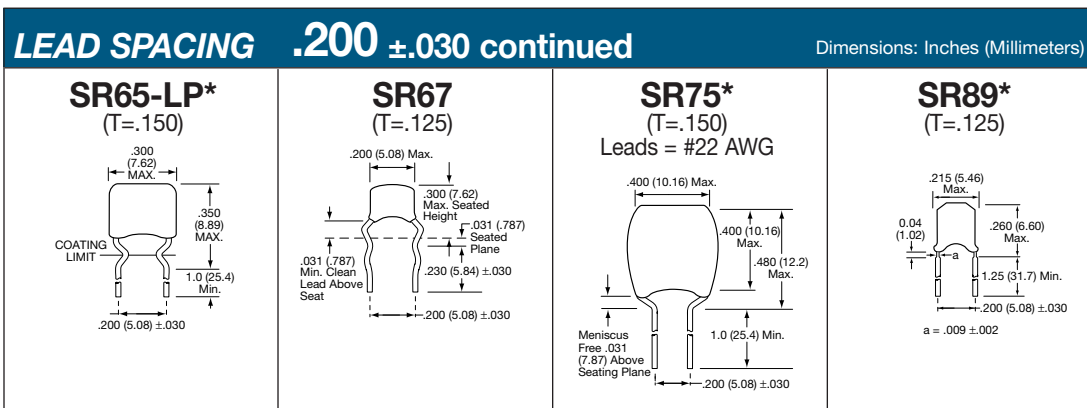
**Voltage rating based on DWV of 150% of rated voltage.

Configurations by Lead Spacing

LEAD SPACING .100 ±.030				Dimensions: Inches (Millimeters)			
<p>SR07* (T=.100)</p> <p>.150 (3.81) Max. .250 (6.35) Max. .050 (1.27) Clean Above Seating Plane 1.0 (25.4) Min. 100 (2.54) ±.030</p>	<p>SR14 (T=.100)</p> <p>.200 (5.08) Max. .300 (7.62) Max. Meniscus Free .031 (.787) Above Seating Plane .230 (5.84) ±.030 100 (2.54) ±.030</p>	<p>SR15* (T=.100)</p> <p>.150 (3.81) Max. .150 (3.81) Max. .060 (1.52) Max. 1.0 (25.4) Min. 100 (2.54) ±.030</p>	<p>SR20* (T=.125)</p> <p>.200 (5.08) Max. .200 (5.08) Max. .060 (1.52) Max. 1.0 (25.4) Min. 100 (2.54) ±.030</p>	<p>SR29* (T=.125)</p> <p>.200 (5.08) Max. .250 (6.35) Max. Meniscus Free .031 (.787) Above Seating Plane 1.0 (25.4) Min. 100 (2.54) ±.030</p>	<p>SR62* (T=.100)</p> <p>.210 (5.33) Max. 0.04 (1.02) .356 (9.09) Max. 1.25 (31.7) Min. 100 (2.54) ±.030 a = .009 ±.002</p>	<p>SR62-LP* (T=.100)</p> <p>.170 (4.32) Max. 0.04 (1.02) .271 (6.88) Max. 1.25 (31.7) Min. 100 (2.54) ±.030 a = .009 ±.002</p>	

LEAD SPACING .200 ±.030					Dimensions: Inches (Millimeters)									
<p>SR12* (T=.100)</p> <p>.150 (3.81) Max. .230 (5.84) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR13* (T=.125)</p> <p>.200 (5.08) Max. Meniscus Free .031 (.787) Above Seating Plane .350 (8.89) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR21* (T=.125)</p> <p>.200 (5.08) Max. .031 (.787) Clean Above Seat .300 (7.62) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR21-85* (T=.125)</p> <p>.200 (5.08) Max. .200 (5.08) Max. .300 (7.62) Max. Meniscus Free .031 (.787) Above Seating Plane 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR28* (T=.125)</p> <p>.200 (5.08) Max. Meniscus Free .031 (.787) Above Seating Plane .250 (6.35) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR30* (T=.150)</p> <p>.300 (7.62) Max. .300 (7.62) Max. .060 (1.52) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR30-LP* (T=.150)</p> <p>.300 (7.62) Max. .225 (5.71) Max. 0.059 (1.5) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR32* (T=.150)</p> <p>.300 (7.62) Max. Meniscus Free .031 (.787) Above Seating Plane .390 (9.91) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR40* (T=.150)</p> <p>.400 (10.16) Max. .400 (10.16) Max. .060 (1.52) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR59* (T=.125)</p> <p>.200 (5.08) Max. .031 (.787) Clean Above Seat .300 (7.62) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR61 (T=.150)</p> <p>.300 (7.62) Max. Meniscus Free .031 (.787) Above Seating Plane .500 (12.7) Max. .230 (5.84) ±.030 200 (5.08) ±.030</p>	<p>SR63* (T=.150)</p> <p>.300 (7.62) Max. .500 (12.7) Max. .137/.196 (3.48/4.98) 1.0 (25.4) Min. 200 (5.08) ±.030</p>	<p>SR64* (T=.150)</p> <p>.300 (7.62) Max. .500 (12.7) Max. 0.04 (1.02) 1.25 (31.7) Min. 200 (5.08) ±.030 a = .009 ±.002</p>	<p>SR64-LP* (T=.150)</p> <p>.268 (6.81) Max. 0.04 (1.02) .330 (8.38) Max. 1.25 (31.7) Min. 200 (5.08) ±.030 a = .009 ±.002</p>	<p>SR65* (T=.150)</p> <p>.300 (7.62) Max. .300 (7.62) Max. .400 (10.16) Max. 1.0 (25.4) Min. 200 (5.08) ±.030</p>

Configurations by Lead Spacing



- NOTES:**
1. All leads are #24 AWG unless otherwise noted.
 2. Available in tape and reel packaging(*).
 3. Other styles are also available, contact factory.
 4. (T = XXX) under type designation is maximum thickness in inches.

Tape and Reel

GENERAL INFORMATION

1. Standard reel diameter is 355 millimeters (14 inches) maximum.
2. Reeling standard (#1 or #2) should be specified when ordering.

HOW TO ORDER

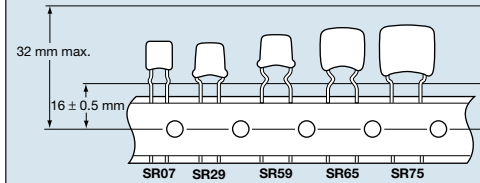
To specify tape and reel packaging, add TR1, TR2 or TRX to the end of the AVX 12 digit part number.

Examples:

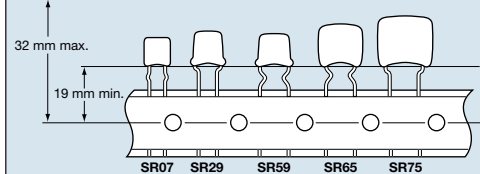
SR215C104KAATR1
 SR305E105MAATR2
 SR215C103JAATTRX

The Insertables

STANDARD 1

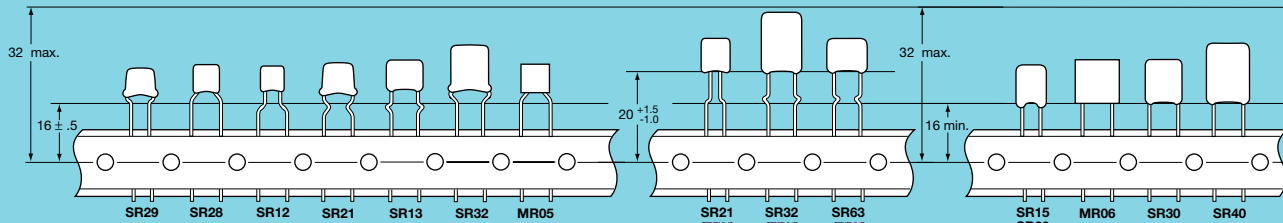


STANDARD 2



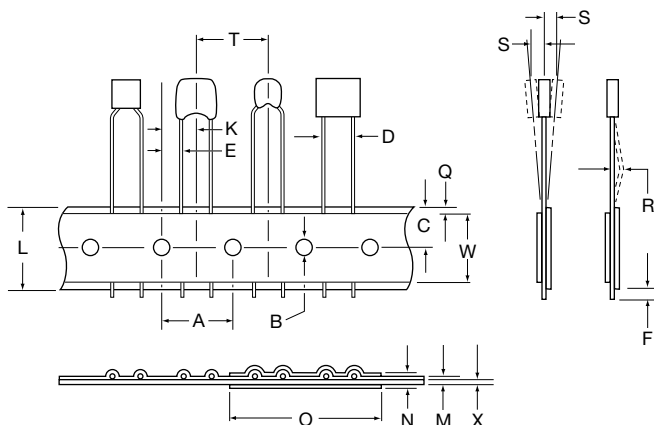
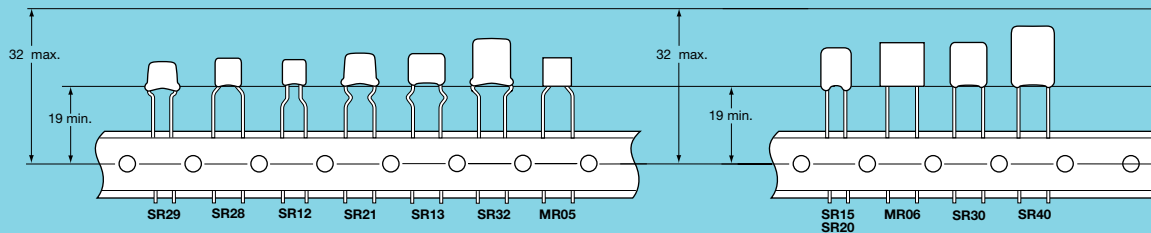
STANDARD 1

Dimensions in Millimeters



STANDARD 2

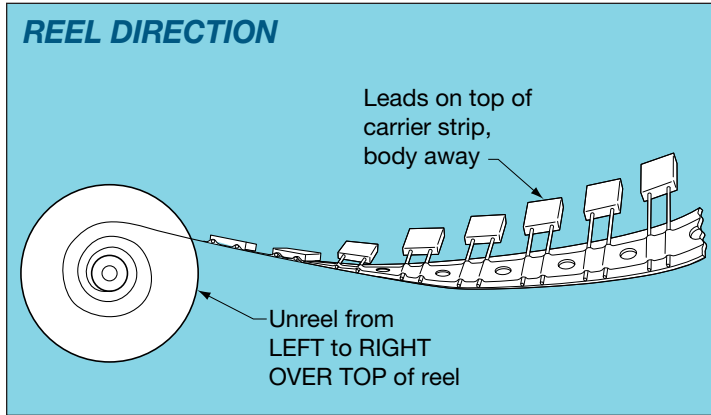
Dimensions in Millimeters



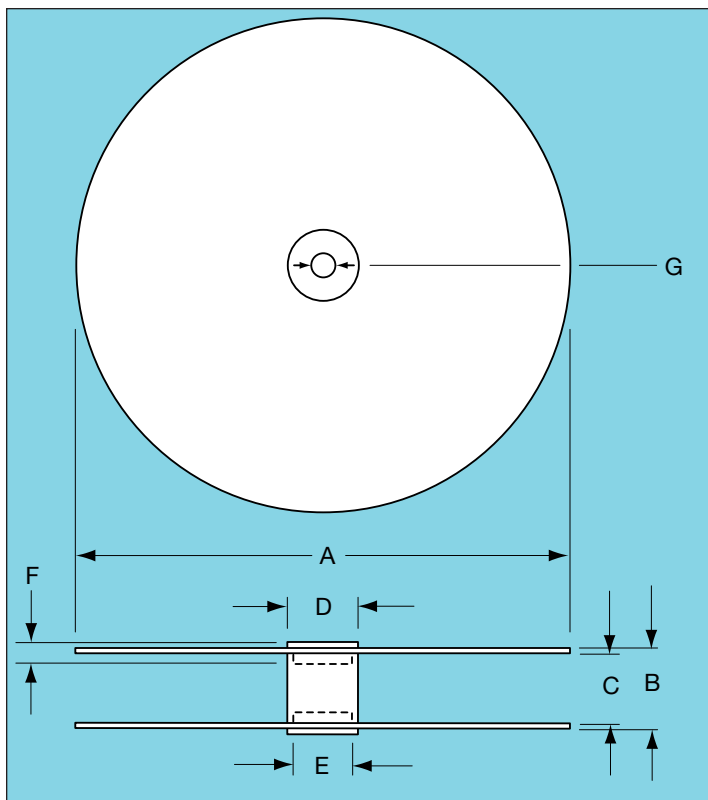
DESCRIPTION

DIMENSIONS (MM)

A. Feed Hole Pitch	12.70 ± .20
B. Feed Hole Diameter	3.99 ± .20
C. Feed Hole Location	9.02 ± .51
D. Component Lead Spacing	5.00 ^{+0.79} _{-.20} or 2.54 ^{+0.79} _{-.20}
E. Component Lead Location	3.81 ± .51 or 5.00 ± .51 for 2.54 lead spacing
F. Component Lead Protrusion (edge of carrier to cut end of lead)	2.00 maximum
K. Component Body Location	6.35 ± .41
L. Carrier Tape Width	18.01 ± 1.02 -.51
M. Carrier Tape Assembly Thickness	.71 ± .20
N. Carrier Tape Spliced Thickness	1.42 maximum
O. Carrier Tape Spliced Length	50.80 - 88.90
Q. Adhesive Tape Border	3.00 maximum
R. Component Bent Leads (either direction)	.79 maximum
S. Component Misalignment	.99 maximum
T. Component Pitch	12.70 ± .99
W. Adhesive Tape Width	5.00 minimum
X. Carrier Tape Thickness	.51 ± .10
Y. Cumulative Pitch over 20 Pitches	254 ± 2.00



QUANTITY PER REEL	
PART	PCS
SR15, 07, 12	3500
SR20, 21, 23, 28 13, 29, 59, 62, 89	3000
SR30, 32, 40, 63, 64 65, 75	2000
MR05, 06	2500



DESCRIPTION	DIMENSIONS (MM)
A – Reel Diameter	304.80 - 355
B – Reel Outside Width	50.80 maximum
C – Reel Inside Width	38.10 - 46.02
D – Core Diameter (O.D.)	102.01 maximum
E – Hub Recess Diameter	86.36 maximum
F – Hub Recess Depth	9.50 minimum
G – Arbor Hole Diameter	25.40 - 30.48

CONVERSION TABLE									
MM	IN	MM	IN	MM	IN	MM	IN	MM	IN
.10	.004	1.52	.060	5.00	.197	9.91	.390	32.00	1.260
.20	.007	2.00	.079	5.08	.200	10.03	.395	38.10	1.500
.38	.015	2.54	.100	6.22	.245	10.16	.400	46.02	1.812
.41	.016	3.00	.118	6.35	.250	11.68	.460	50.80	2.000
.51	.020	3.18	.125	6.60	.260	12.50	.492	86.36	3.400
.71	.028	3.48	.137	6.99	.275	12.70	.500	88.90	3.500
.79	.031	3.81	.150	7.62	.300	16.00	.630	102.01	4.016
.99	.039	3.99	.157	8.89	.350	18.01	.709	254.00	10.000
1.02	.040	4.45	.175	9.02	.355	25.40	1.000	304.80	12.000
1.42	.056	4.98	.196	9.50	.374	30.48	1.200	355.00	14.000