

Radial Leads/SkyCap®/SR Series



GENERAL INFORMATION

AVX SR Series

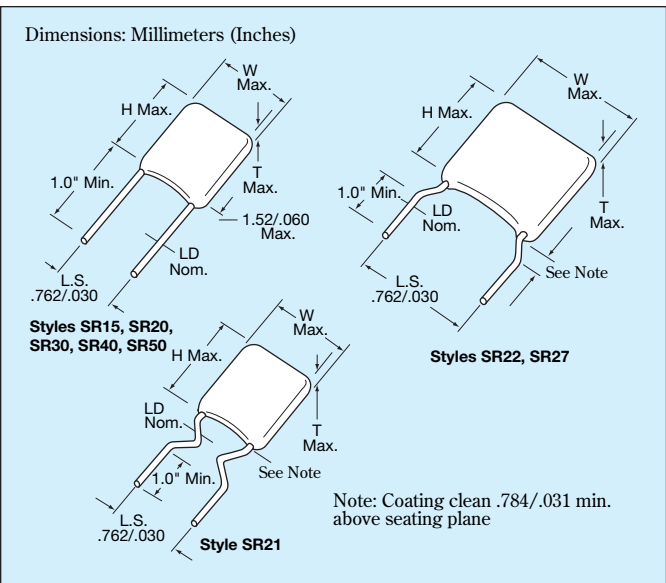
Conformally Coated Radial Ledged MLC

Temperature Coefficients: C0G (NP0), X7R, Z5U

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

Case Material: Epoxy

Lead Material: RoHS Compliant, 100% Tin

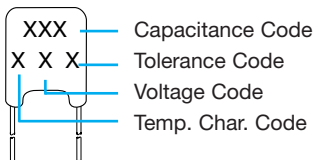


HOW TO ORDER

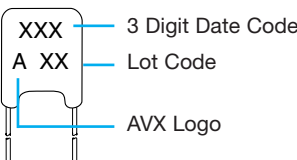
SR21	5	E	104	M	A	R
AVX Style	Voltage	Temperature Coefficient	Capacitance	Capacitance Tolerance	Failure Rate	Leads
SR15 SR20 SR21 SR22 SR27 SR30 SR40 SR50	5 = 50V 1 = 100V 2 = 200V 9 = 300V 8 = 400V 7 = 500V	A = C0G (NP0) C = X7R E = Z5U	First two digits are the significant figures of capacitance. Third 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 = 1.4pF.)	C0G (NP0): C = $\pm 25\text{pF}$ D = $\pm 5\text{pF}$ F = $\pm 1\%$ ($>50\text{pF}$ only) G = $\pm 2\%$ ($>25\text{pF}$ only) J = $\pm 5\%$ K = $\pm 10\%$ X7R: J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$ Z5U: M = $\pm 20\%$ Z = $+80\%$ -20%	A = Not Applicable	R = RoHS

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 33 and 34.



Radial Leads/SkyCap®/SR Series



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			WVDC	
		200	100	50	200	100	50	200	100	50	200	100	50	200	100	50	100	50	100	50	100	50		
1.0-9.9	SR151A1R0DAR																							
10	SR151A100KAR																							
15	SR_____A150KAR																							
22	SR_____A220KAR																							
33	SR_____A330KAR																							
39	SR_____A390KAR																							
47	SR_____A470KAR																							
68	SR_____A680KAR																							
100	SR151A101KAR																							
150	SR_____A151KAR																							
220	SR_____A221KAR																							
330	SR_____A331KAR																							
390	SR_____A391KAR																							
470	SR_____A471KAR																							
680	SR_____A681KAR																							
1000	SR211A102KAR																							
1500	SR_____A152KAR																							
2200	SR_____A222KAR																							
3900	SR_____A392KAR																							
4700	SR_____A472KAR																							
6800	SR_____A682KAR																							
8200	SR_____A822KAR																							
10,000	SR305A103KAR																							
15,000	SR-----A153KAR																							
22,000	SR_____A223KAR																							
33,000	SR_____A333KAR																							
39,000	SR_____A393KAR																							
47,000	SR_____A473KAR																							
68,000	SR_____A683KAR																							
100,000	SR_____A104KAR																							

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

Radial Leads/SkyCap®/SR Series



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.* pF	Industry Preferred Values in Blue	WVDC			WVDC			WVDC			WVDC			WVDC			WVDC			WVDC			
		200	100	50	200	100	50	200	100	50	100	50	100	50	200	100	50	200	100	50	200	100	50
470	SR.....C471KAR																						
1000	SR155C102KAR																						
1500	SR.....C152KAR																						
2200	SR.....C222KAR																						
3300	SR.....C332KAR																						
4700	SR.....C472KAR																						
6800	SR.....C682KAR																						
10,000	SR215C103KAR																						
15,000	SR.....C153KAR																						
22,000	SR.....C223KAR																						
33,000	SR.....C333KAR																						
47,000	SR.....C473KAR																						
68,000	SR.....C683KAR																						
100,000	SR215C104KAR																						
150,000	SR.....C154KAR																						
220,000	SR215C224KAR																						
330,000	SR.....C334KAR																						
390,000	SR.....C394KAR																						
470,000	SR305C474KAR																						
1.0 µF	SR305C105KAR																						
2.2 µF	SR405C225KAR																						
2.7 µF	SR505C275KAR																						
4.7 µF	SR505C475KAR																						

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
	= Extended range
	= Extended range, SR20 only
	= Extended range with 0.150" thickness maximum

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

Radial Leads/SkyCap®/SR Series



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 pF 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 SR15E103ZAR								
47,000 SR.....E473ZAR								
100,000 SR215E104ZAR								
150,000 SR.....E154ZAR								
220,000 SR215E224ZAR								
330,000 SR215E334ZAR								
470,000 SR215E474ZAR								
680,000 SR.....E684ZAR								
1.0 µF SR.....105ZAR								
1.5 µF SR30E155ZAR								
2.2 µF SR30E225ZAR								
3.3 µF SR30E335ZAR								
4.7 µF SR30E475ZAR								

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	
	C0G (NP0)	X7R
SR29	900 pF	.015 µF
SR20	1800 pF	.033 µF
SR28	900 pF	.015 µF
SR59	1800 pF	.033 µF
SR13	7200 pF	.12 µF
SR21		
SR30		
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 27 and 28 for style sizes.

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

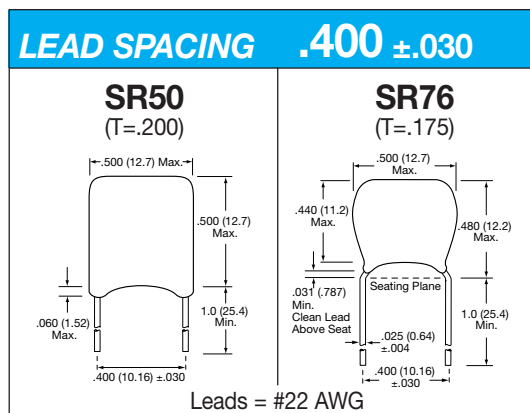
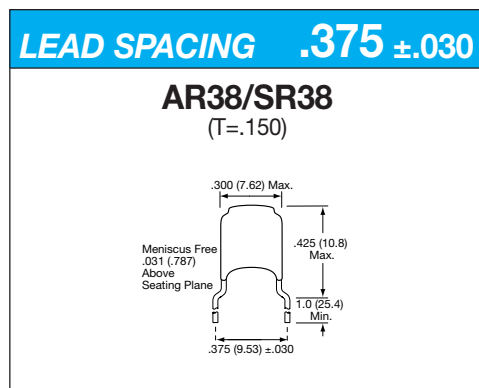
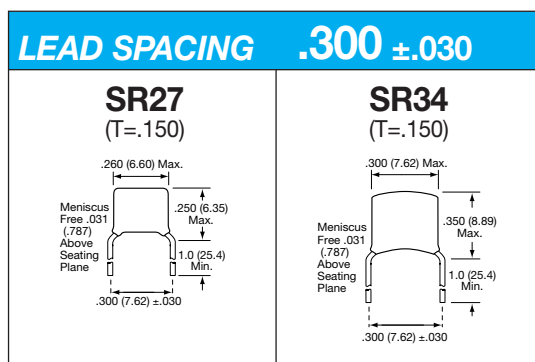
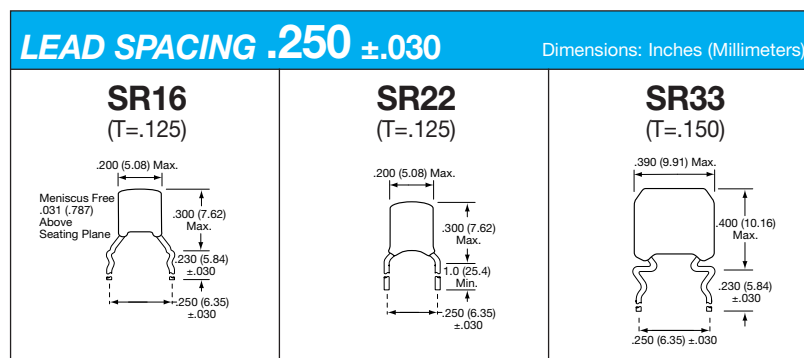
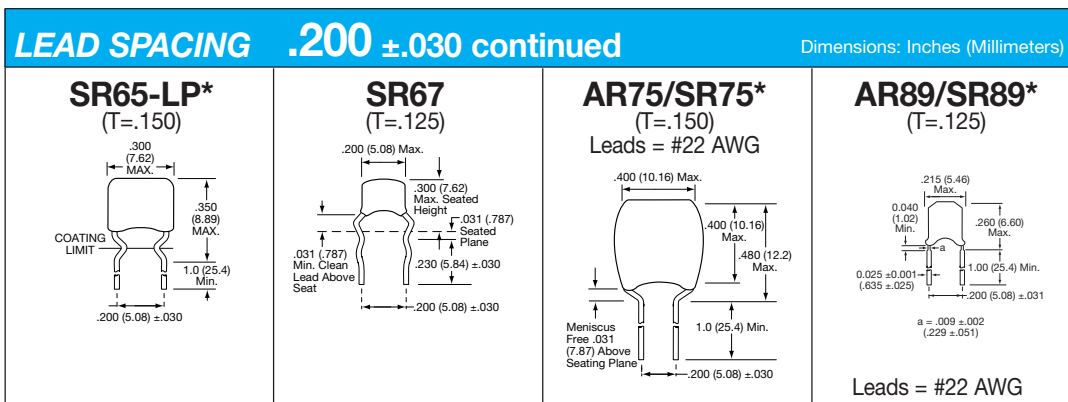
Configurations by Lead Spacing

LEAD SPACING .100 ±.030				Dimensions: Inches (Millimeters)
AR07/SR07* (T=.100)	AR14/SR14 (T=.100)	AR15/SR15* (T=.100)	AR20/SR20* (T=.125)	
AR29/SR29* (T=.125)	AR62/SR62* (T=.125)	SR62-LP* (T=.100)	Leads = #22 AWG	Leads = #22 AWG

LEAD SPACING .200 ±.030					Dimensions: Inches (Millimeters)
AR12/SR12* (T=.100)	SR13* (T=.125)	AR21/SR21* (T=.125)	SR21-85* (T=.125)	SR28* (T=.125)	
AR30/SR30* (T=.150)	SR30-LP* (T=.150)	AR32/SR32* (T=.150)	AR40/SR40* (T=.150)	AR59/SR59* (T=.125)	
SR61 (T=.150)	SR63* (T=.150)	SR64* (T=.150)	SR64-LP* (T=.150)	AR65/SR65* (T=.150)	Leads = #22 AWG

*SL style available in all SR configurations.

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.

*SL style available in all SR configurations.

Radial Leads/Packaging

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.

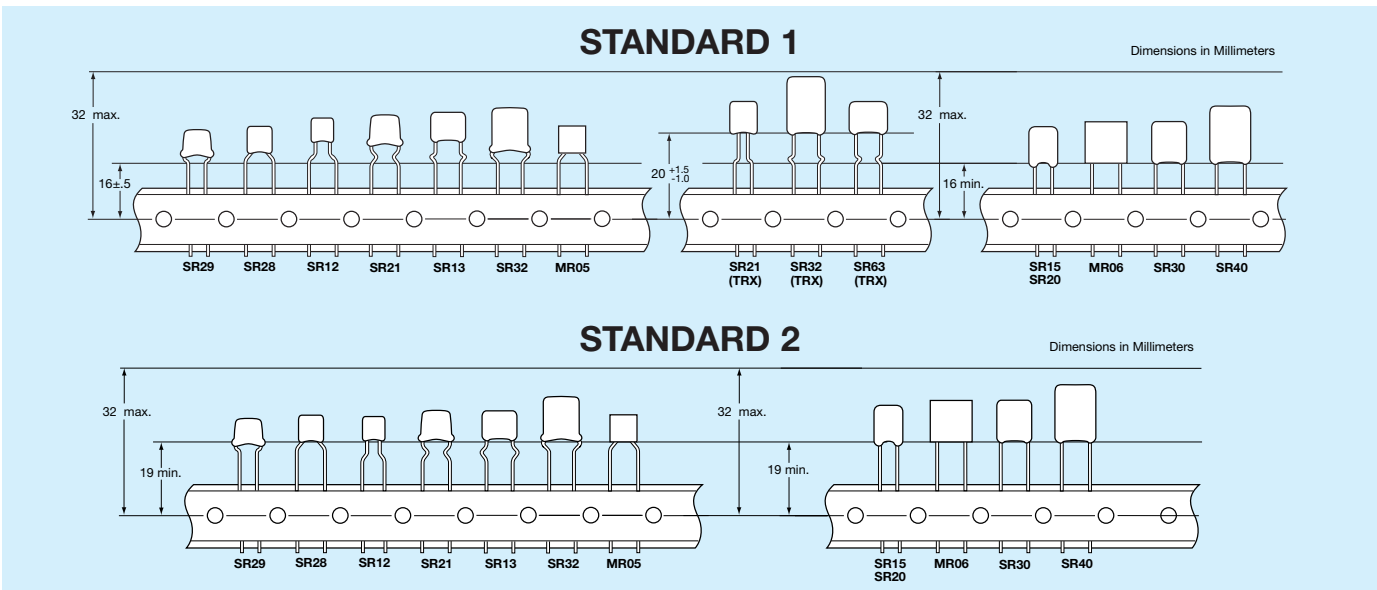
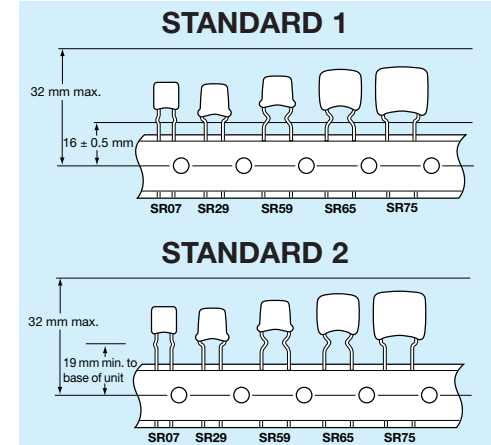
HOW TO ORDER

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

Examples:

SR215C104KARTR1
SR305E105MARTR2
SR215C103JARTRX

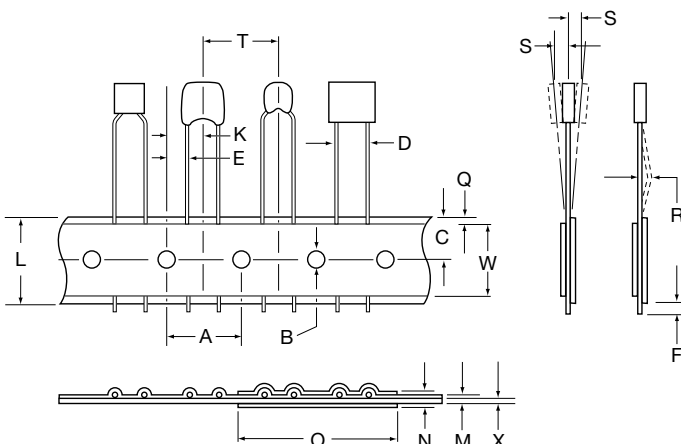
THE INSERTABLES



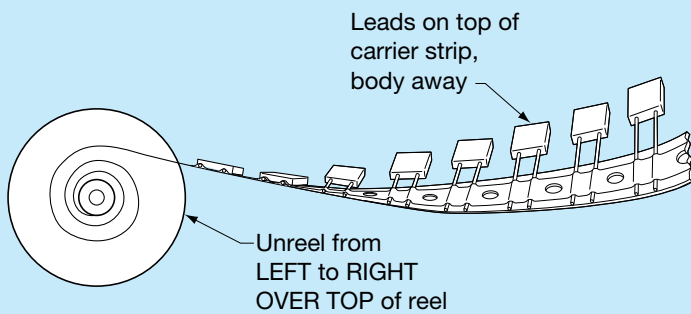
DESCRIPTION

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 ^{+.79} _{-.20} or 2.54 ^{+.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



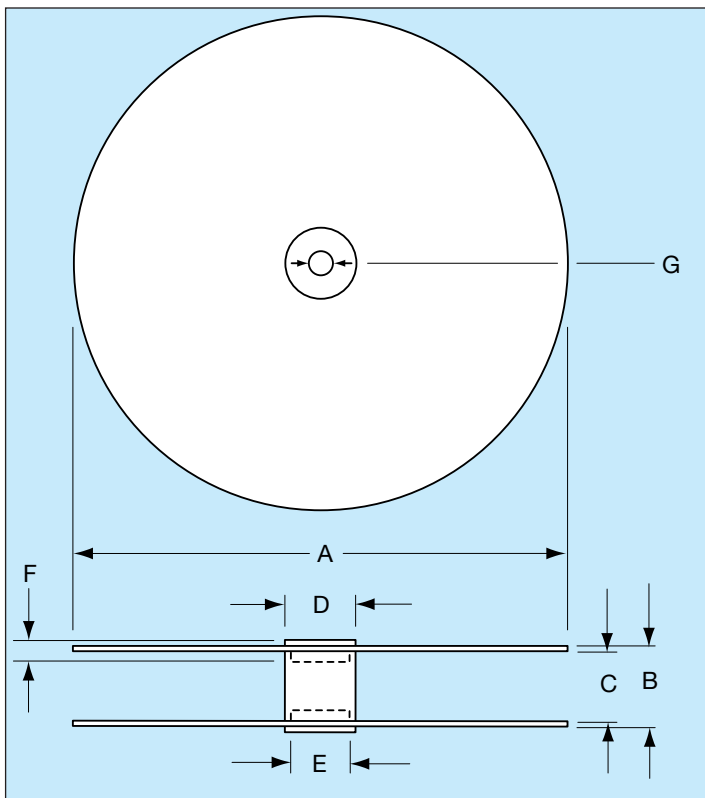
REEL DIRECTION



QUANTITY PER REEL SR/AR

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

*SL style available in all SR configurations.



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