

RADIAL LEADS

SkyCap®/SR Series



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: RoHS Compliant, 100% Tin



HOW TO ORDER

SR21

5

E

104

M

A

R

TR1

AVX Style

SR15  
SR20  
SR21  
SR22  
SR27  
SR30  
SR40  
SR50

Voltage

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

Temperature Coefficient

A = C0G (NP0)  
C = X7R  
E = Z5U

Capacitance

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.)

Capacitance Tolerance

C0G (NP0):  
C =  $\pm 0.25\text{pF}$   
D =  $\pm 0.5\text{pF}$   
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%

Failure Rate

A = Not Applicable

Leads

R = RoHS

Packaging

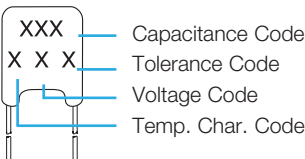
Blank: Bulk Packaging 1.0" minimum of lead length  
T: Trimmed leads .230"  $\pm$  .030"  
Bulk packaging  
TR1: Tape and Reel Packaging  
AP1: Ammopack packaging

See packaging specification pages 33-34

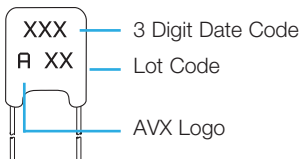


MARKING

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

## 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<br>(.150)                       | 5.08<br>(.200)  | 5.08<br>(.200)  | 5.08<br>(.200)  | 6.604<br>(.260) | 7.62<br>(.300) | 10.16<br>(.400) | 12.70<br>(.500) |     |    |      |     |    |      |     |    |      |    |     |      |     |    |
| Height (H)           | 3.81<br>(.150)                       | 5.08<br>(.200)  | 5.08<br>(.200)  | 5.08<br>(.200)  | 6.35<br>(.250)  | 7.62<br>(.300) | 10.16<br>(.400) | 12.70<br>(.500) |     |    |      |     |    |      |     |    |      |    |     |      |     |    |
| Thickness (T)        | 2.54<br>(.100)                       | 3.175<br>(.125) | 3.175<br>(.125) | 3.175<br>(.125) | 4.06<br>(.160)  | 3.81<br>(.150) | 3.81<br>(.150)  | 5.08<br>(.200)  |     |    |      |     |    |      |     |    |      |    |     |      |     |    |
| Lead Spacing (L.S.)  | 2.54<br>(.100)                       | 2.54<br>(.100)  | 5.08<br>(.200)  | 6.35<br>(.250)  | 7.62<br>(.300)  | 5.08<br>(.200) | 5.08<br>(.200)  | 10.16<br>(.400) |     |    |      |     |    |      |     |    |      |    |     |      |     |    |
| Lead Diameter (L.D.) | .508<br>(.020)                       | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020) | .508<br>(.020)  | .635<br>(.025)  |     |    |      |     |    |      |     |    |      |    |     |      |     |    |
| Cap. in.*<br>pF      | Industry Preferred<br>Values in Blue | 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               | SR....A103KAR                        |                 |                 |                 |                 |                |                 |                 |     |    |      |     |    |      |     |    |      |    |     |      |     |    |
| 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

Capacitance ranges available for  
 SR12 and SR07 same as SR15  
 SR62 and SR59 same as SR21  
 SR64 and SR65 same as SR30  
 SR75 same as SR40  
 SR13 same as SR21

**NOTE:** For others voltages, tolerances, electrical specifications and NPO typical characteristics, see the AVX Multilayer Ceramic Leaded Capacitors Catalog.

RADIAL LEADS

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<br>(.150) | 5.08<br>(.200)  | 5.08<br>(.200)  | 5.08<br>(.200)  | 6.604<br>(.260) | 7.62<br>(.300) | 10.16<br>(.400) | 12.70<br>(.500) |                                  |      |     |    |      |     |    |      |     |    |
|                    | Height (H)                           | 3.81<br>(.150) | 5.08<br>(.200)  | 5.08<br>(.200)  | 5.08<br>(.200)  | 6.35<br>(.250)  | 7.62<br>(.300) | 10.16<br>(.400) | 12.70<br>(.500) |                                  |      |     |    |      |     |    |      |     |    |
|                    | Thickness (T)                        | 2.54<br>(.100) | 3.175<br>(.125) | 3.175<br>(.125) | 3.175<br>(.125) | 4.06<br>(.160)  | 3.81<br>(.150) | 3.81<br>(.150)  | 5.08<br>(.200)  |                                  |      |     |    |      |     |    |      |     |    |
|                    | Lead Spacing (L.S.)                  | 2.54<br>(.100) | 2.54<br>(.100)  | 5.08<br>(.200)  | 6.35<br>(.250)  | 7.62<br>(.300)  | 5.08<br>(.200) | 5.08<br>(.200)  | 10.16<br>(.400) |                                  |      |     |    |      |     |    |      |     |    |
|                    | Lead Diameter (L.D.)                 | .508<br>(.020) | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020) | .508<br>(.020)  | .635<br>(.025)  |                                  |      |     |    |      |     |    |      |     |    |
| Cap. in.*<br>pF    | Industry Preferred<br>Values in Blue | WVDC           |                 |                 | WVDC            |                 |                | WVDC            |                 |                                  | WVDC |     |    | WVDC |     |    | WVDC |     |    |
|                    |                                      | 200            | 100             | 50              | 200             | 100             | 50             | 200             | 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 uF             | SR305C105KAR                         |                |                 |                 |                 |                 |                |                 |                 |                                  |      |     |    |      |     |    |      |     |    |
| 2.2 uF             | SR405C225KAR                         |                |                 |                 |                 |                 |                |                 |                 |                                  |      |     |    |      |     |    |      |     |    |
| 2.7 uF             | SR505C275KAR                         |                |                 |                 |                 |                 |                |                 |                 |                                  |      |     |    |      |     |    |      |     |    |
| 4.7 uF             | SR505C475KAR                         |                |                 |                 |                 |                 |                |                 |                 |                                  |      |     |    |      |     |    |      |     |    |
| 10.0 uF            | SR655C106KAR                         |                |                 |                 |                 |                 |                |                 |                 |                                  |      |     |    |      |     |    |      |     |    |

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

-  = Industry preferred values
-  = Extended range
-  = Extended range with 0.150" thickness maximum

# RADIAL LEADS

## 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<br>(W)            | 3.81<br>(.150)                       | 5.08<br>(.200)  | 5.08<br>(.200)  | 5.08<br>(.200)  | 6.604<br>(.260) | 7.62<br>(.300) | 10.16<br>(.400) | 12.70<br>(.500) |    |      |    |      |    |      |    |      |    |
| Height<br>(H)           | 3.81<br>(.150)                       | 5.08<br>(.200)  | 5.08<br>(.200)  | 5.08<br>(.200)  | 6.35<br>(.250)  | 7.62<br>(.300) | 10.16<br>(.400) | 12.70<br>(.500) |    |      |    |      |    |      |    |      |    |
| Thickness<br>(T)        | 2.54<br>(.100)                       | 3.175<br>(.125) | 3.175<br>(.125) | 3.175<br>(.125) | 4.06<br>(.160)  | 3.81<br>(.150) | 3.81<br>(.150)  | 5.08<br>(.200)  |    |      |    |      |    |      |    |      |    |
| Lead Spacing<br>(L.S.)  | 2.54<br>(.100)                       | 2.54<br>(.100)  | 5.08<br>(.200)  | 6.35<br>(.250)  | 7.62<br>(.300)  | 5.08<br>(.200) | 5.08<br>(.200)  | 10.16<br>(.400) |    |      |    |      |    |      |    |      |    |
| Lead Diameter<br>(L.D.) | .508<br>(.020)                       | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020) | .508<br>(.020)  | .635<br>(.025)  |    |      |    |      |    |      |    |      |    |
| Cap. in.*<br>pF         | Industry Preferred<br>Values in Blue | WVDC            |                 | WVDC            |                 | WVDC           |                 | WVDC            |    | WVDC |    | WVDC |    | WVDC |    | WVDC |    |
|                         |                                      | 100             | 50              | 100             | 50              | 100            | 50              | 100             | 50 | 100  | 50 | 100  | 50 | 100  | 50 | 100  | 50 |
| 10,000                  | SR155E103ZAR                         |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 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

Capacitance ranges available for SR12 and SR07 same as SR15  
 SR62 and SR59 same as SR21  
 SR64 and SR65 same as SR30  
 SR75 same as SR40  
 SR13 same as SR21

**NOTE:** For others voltages, tolerances, electrical specifications and NPO typical characteristics, see the AVX Multilayer Ceramic Leaded Capacitors Catalog.

### AVX 500 VOLT SKYCAPS\*\*

| STYLE*               | MAXIMUM CAPACITANCE VALUE |         |
|----------------------|---------------------------|---------|
|                      | C0G (NPO)                 | X7R     |
| SR29                 | 900 pF                    | .015 µF |
| SR20                 | 1800 pF                   | .033 µF |
| SR28<br>SR59         | 900 pF                    | .015 µF |
| SR13<br>SR21         | 1800 pF                   | .033 µF |
| SR30<br>SR61<br>SR65 | 7200 pF                   | .12 µF  |
| SR40<br>SR75         | .015 µF                   | .27 µF  |
| SR22                 | 1800 pF                   | .033 µF |
| SR27                 | 1800 pF                   | .033 µF |
| SR76                 | .015 µF                   | .27 µF  |

\*Consult pages 27 and 28 for style sizes.

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