

# RADIAL LEADS

## SkyCap®/SR Series



### GENERAL INFORMATION

#### SR Series

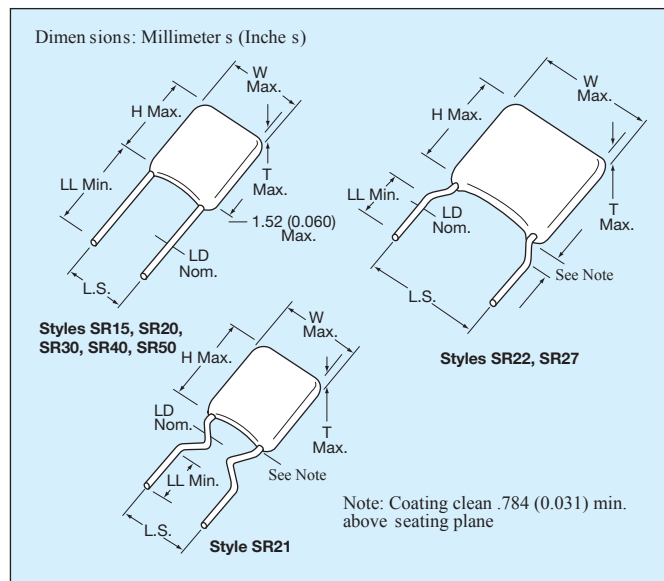
#### Conformally Coated Radial Leaded MLC

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

#### 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 =  $\pm 80\%$  -20%

#### Failure Rate

A = Not Applicable

#### Leads

R = RoHS

#### Packaging

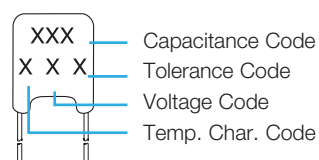
Blank: Bulk Packaging 1.0" minimum of lead length  
T: Trimmed leads .230"  $\pm$  .030"  
Bulk packaging  
TR1: Tape and Reel Packaging  
AP1: Ammopack packaging

See packaging specification pages 33-34

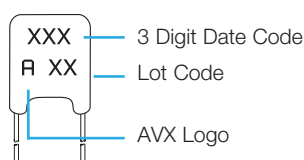


### MARKING

#### 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)

| Style                   | SR15                                 | SR20            |     |    | SR21            |     |    | SR22            |     |    | SR27            |     |    | SR30           |     | SR40            |      | SR50            |      |    |
|-------------------------|--------------------------------------|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|----------------|-----|-----------------|------|-----------------|------|----|
| “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 |    |
|                         |                                      | 200             | 100 | 50 | 200             | 100 | 50 | 200             | 100 | 50 | 200             | 100 | 50 | 200            | 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 KYOCERA AVX Multilayer Ceramic Leaded Capacitors Catalog.

# RADIAL LEADS

## X7R Dielectric



### SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

|                 | Style                                | SR15           |     |    | SR20            |     |    | SR21            |     |    | SR22            |     |    | SR27            |     |    | SR30           |     |    | SR40            |     |    | SR50            |     |    |
|-----------------|--------------------------------------|----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|----------------|-----|----|-----------------|-----|----|-----------------|-----|----|
|                 | "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            |     |    | WVDC            |     |    |
|                 |                                      | 200            | 100 | 50 | 200             | 100 | 50 | 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)

| Style                   | SR15                                 | SR20            | SR21            | SR22            | SR27            | SR30           | SR40            | SR50            |    |      |    |      |    |      |    |      |    |
|-------------------------|--------------------------------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|----|------|----|------|----|------|----|------|----|
| “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 KYOCERA AVX Multilayer Ceramic Leaded Capacitors Catalog.

### 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.

# RADIAL LEADS

## SkyCap®/SL Series

### GENERAL INFORMATION

#### SL Series

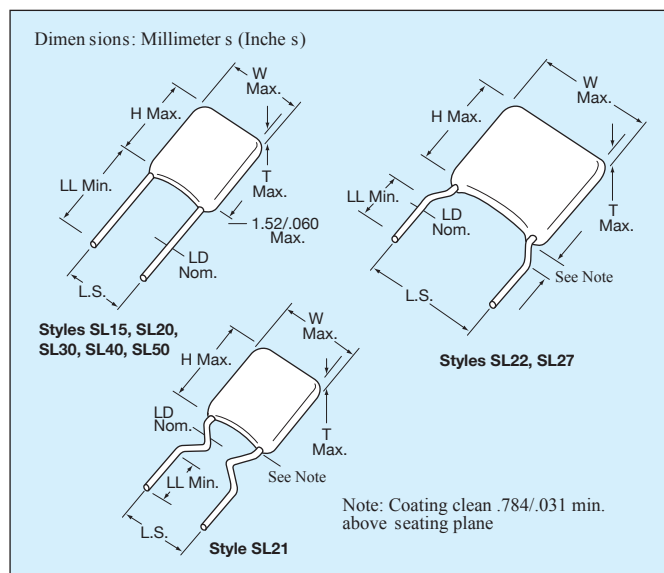
#### Conformally Coated Radial Leaded MLC

Temperature Coefficients: C0G (NP0), X7R, Z5U

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

Case Material: Epoxy

Lead Material: Solderable Sn/Pb



Drawings are for illustrative purposes only.  
Actual lead form shape could vary within stated tolerances based on body size.

### HOW TO ORDER

**SL21**

**5**

**E**

**104**

**M**

**A**

**B**

**TR1**

#### Style

SL15  
SL20  
SL21  
SL22  
SL27  
SL30  
SL40  
SL50

#### 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 =  $\pm 80\%$   
-20%

#### Failure Rate

A = Not Applicable

#### Leads

B = Leads Sn/Pb Blank:  
(Tin lead product)

#### Packaging

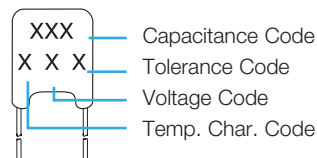
Bulk Packaging 1.0" minimum of lead length  
T: Trimmed leads .230"  $\pm$  .030"  
Bulk packaging  
TR1: Tape and Reel Packaging  
AP1: Ammopack packaging

See packaging specification pages 33-34

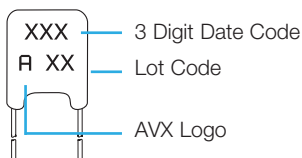
**Not RoHS Compliant**

### MARKING

#### FRONT



#### BACK



### PACKAGING REQUIREMENTS

|                          | Quantity per Bag |
|--------------------------|------------------|
| SL15, 20, 21, 22, 27, 30 | 1000 Pieces      |
| SL40, 50                 | 500 Pieces       |

Note: SL15, SL20, SL21, SL30, and SL40 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)

| Style                | SL15                                 | SL20            | SL21            | SL22            | SL27            | SL30           | SL40            | SL50            |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
|----------------------|--------------------------------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----|------|-----|------|----|------|-----|------|-----|------|-----|------|-----|----|
| “Insertable”         | SL07                                 | SL29            | SL59            | N/A             | N/A             | SL65           | SL75            | 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 |     | 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              | SL151A1R0DAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 10                   | SL151A100KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 15                   | SL151A150KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 22                   | SL151A220KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 33                   | SL151A330KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 39                   | SL151A390KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 47                   | SL151A470KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 68                   | SL151A680KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 100                  | SL151A101KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 150                  | SL151A151KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 220                  | SL151A221KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 330                  | SL151A331KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 390                  | SL151A391KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 470                  | SL151A471KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 680                  | SL151A681KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 1000                 | SL211A102KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 1500                 | SL151A152KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 2200                 | SL151A222KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 3900                 | SL151A392KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 4700                 | SL151A472KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 6800                 | SL151A682KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 8200                 | SL151A822KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 10,000               | SL305A103KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 15,000               | SL151A153KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 22,000               | SL151A223KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 33,000               | SL151A333KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 39,000               | SL151A393KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 47,000               | SL151A473KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 68,000               | SL151A683KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |
| 100,000              | SL151A104KAB                         |                 |                 |                 |                 |                |                 |                 |     |      |     |      |    |      |     |      |     |      |     |      |     |    |

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  
 = SL20 only

**NOTE:** Capacitance ranges available for  
 SL12 same as SL15  
 SL62 same as SL21  
 SL64 same as SL30  
 SL89 same as SL21

# RADIAL LEADS

## X7R Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

| Style                                             | SL15               |  |  | SL20               |  |  | SL21               |  |  | SL22               |  |  | SL27               |  |  | SL30               |  |  | SL40               |  |  | SL50               |  |  |
|---------------------------------------------------|--------------------|--|--|--------------------|--|--|--------------------|--|--|--------------------|--|--|--------------------|--|--|--------------------|--|--|--------------------|--|--|--------------------|--|--|
| “Insertable”                                      | SL07               |  |  | SL29               |  |  | SL59               |  |  | N/A                |  |  | N/A                |  |  | SL65               |  |  | SL75               |  |  | 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.* Industry Preferred<br>pF Values in Blue | WVDC<br>200 100 50 |  |  | WVDC<br>200 100 50 |  |  | WVDC<br>200 100 50 |  |  | WVDC<br>200 100 50 |  |  | WVDC<br>200 100 50 |  |  | WVDC<br>200 100 50 |  |  | WVDC<br>200 100 50 |  |  | WVDC<br>200 100 50 |  |  |
| 470 SL_____C471KAB                                |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 1000 SL155C102KAB                                 |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 1500 SL_____C152KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 2200 SL_____C222KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 3300 SL_____C332KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 4700 SL_____C472KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 6800 SL_____C682KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 10,000 SL215C103KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 15,000 SL_____C153KAB                             |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 22,000 SL_____C223KAB                             |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 33,000 SL_____C333KAB                             |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 47,000 SL_____C473KAB                             |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 68,000 SL_____C683KAB                             |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 100,000 SL215C104KAB                              |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 150,000 SL_____C154KAB                            |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 220,000 SL215C224KAB                              |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 330,000 SL_____C334KAB                            |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 390,000 SL_____C394KAB                            |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 470,000 SL305C474KAB                              |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 1.0 uF SL305C105KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 2.2 uF SL405C225KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 2.7 uF SL505C275KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 4.7 uF SL505C475KAB                               |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |
| 10.0 uF SL655C106KAB                              |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |                    |  |  |

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)

| Style                   | SL15                                 | SL20            | SL21            | SL22            | SL27            | SL30           | SL40            | SL50            |    |      |    |      |    |      |    |      |    |
|-------------------------|--------------------------------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|----|------|----|------|----|------|----|------|----|
| “Insertable”            | SL07                                 | SL29            | SL59            | N/A             | N/A             | SL65           | SL75            | 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                  | SL155E103ZAB                         |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 47,000                  | SL.....E473ZAB                       |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 100,000                 | SL215E104ZAB                         |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 150,000                 | SL.....E154ZAB                       |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 220,000                 | SL215E224ZAB                         |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 330,000                 | SL215E334ZAB                         |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 470,000                 | SL215E474ZAB                         |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 680,000                 | SL.....E684ZAB                       |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 1.0 µF                  | SL.....105ZAB                        |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 1.5 µF                  | SL30E155ZAB                          |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 2.2 µF                  | SL30E225ZAB                          |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 3.3 µF                  | SL30E335ZAB                          |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |
| 4.7 µF                  | SL30E475ZAB                          |                 |                 |                 |                 |                |                 |                 |    |      |    |      |    |      |    |      |    |

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  
 = SL20 only

### 500 VOLT SKYCAPS\*\*

| STYLE*               | MAXIMUM CAPACITANCE VALUE |         |
|----------------------|---------------------------|---------|
|                      | C0G (NP0)                 | X7R     |
| SL29                 | 900 pF                    | .015 µF |
| SL20                 | 1800 pF                   | .033 µF |
| SL28<br>SL59         | 900 pF                    | .015 µF |
| SL13<br>SL21         | 1800 pF                   | .033 µF |
| SL30<br>SL61<br>SL65 | 7200 pF                   | .12 µF  |
| SL40<br>SL75         | .015 µF                   | .27 µF  |
| SL22                 | 1800 pF                   | .033 µF |
| SL27                 | 1800 pF                   | .033 µF |
| SL76                 | .015 µF                   | .27 µF  |
| SL50                 | .036 µF                   | .59 µF  |

\*Consult pages 27 and 28 for style sizes.

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