

# Radial Leads/SkyCap®/SR Series



## GENERAL INFORMATION

### AVX SR Series

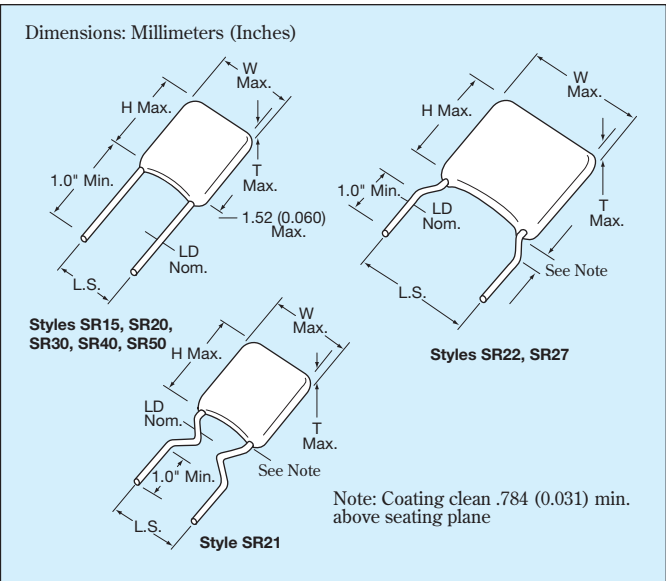
#### Conformally Coated Radial Ledged MLC

Temperature Coefficients: COG (NP0), X7R, Z5U

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

Case Material: Epoxy

Lead Material: RoHS Compliant, 100% Tin



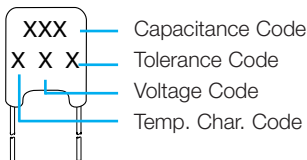
## HOW TO ORDER

| SR21                                                                             | 5                                                                                     | E                                                                     | 104                                                                                                                                                                                                                                                         | M                                                                                                                                                                                                                                                                                                                                      | A                                         | R                                               | TR1                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AVX Style</b><br>SR15<br>SR20<br>SR21<br>SR22<br>SR27<br>SR30<br>SR40<br>SR50 | <b>Voltage</b><br>5 = 50V<br>1 = 100V<br>2 = 200V<br>9 = 300V<br>8 = 400V<br>7 = 500V | <b>Temperature Coefficient</b><br>A = COG (NP0)<br>C = X7R<br>E = Z5U | <b>Capacitance</b><br>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) | <b>Capacitance Tolerance</b><br>COG (NP0):<br>C = $\pm 0.25\text{pF}$<br>D = $\pm 0.5\text{pF}$<br>F = $\pm 1\%$<br>( $>50\text{pF}$ only)<br>G = $\pm 2\%$<br>( $>25\text{pF}$ only)<br>J = $\pm 5\%$<br>K = $\pm 10\%$<br>X7R:<br>J = $\pm 5\%$<br>K = $\pm 10\%$<br>M = $\pm 20\%$<br>Z5U:<br>M = $\pm 20\%$<br>Z = $+80\%$<br>-20% | <b>Failure Rate</b><br>A = Not Applicable | <b>Leads</b><br>R = RoHS Long Lead 1.0" minimum | <b>Packaging</b><br>Blank = Bulk Packaging<br>T = Trimmed Leads .230" $\pm$ .030"<br>Bulk packaging<br>TR1 = Tape and Reel Packaging<br>AP1 = Ammopack Packaging<br>See packaging specification page 33-34. |

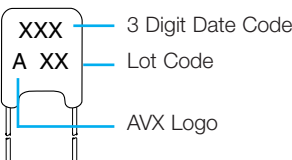


## MARKING

### 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/SkyCap®/SR Series



C0G (NP0) Dielectric

## SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

| AVX Style                                         |                | SR15           |     |    | SR20            |     |    | SR21            |     |    | SR22            |     |    | SR27            |     |    | SR30           |     |    | SR40            |    |     | SR50            |  |
|---------------------------------------------------|----------------|----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|----------------|-----|----|-----------------|----|-----|-----------------|--|
| AVX “Insertable”                                  |                | SR07           |     |    | SR29            |     |    | SR59            |     |    | N/A             |     |    | N/A             |     |    | SR65           |     |    | SR75            |    |     | N/A             |  |
| Width (W)                                         |                | 3.81<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           |     |    | 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 | 100             | 50 | 100 | 50              |  |
| 1.0-9.9<br>10<br>15                               | SR151A1R0DAR   |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR151A100KAR   |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A150KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 22<br>33<br>39                                    | SR.....A220KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A330KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A390KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 47<br>68<br>100                                   | SR.....A470KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A680KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR151A101KAR   |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 150<br>220<br>330                                 | SR.....A151KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A221KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A331KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 390<br>470<br>680                                 | SR.....A391KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A471KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A681KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 1000<br>1500<br>2200                              | SR211A102KAR   |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A152KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A222KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 3900<br>4700<br>6800                              | SR.....A392KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A472KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A682KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 8200<br>10,000<br>15,000                          | SR.....A822KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR305A103KAR   |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A153KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 22,000<br>33,000<br>39,000                        | SR.....A223KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A333KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A393KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
| 47,000<br>68,000<br>100,000                       | SR.....A473KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | SR.....A683KAR |                |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                |     |    |                 |    |     |                 |  |
|                                                   | 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/SkyCap®/SR Series



## X7R Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

| AVX Style               | SR15                                 | SR20            | SR21            | SR22            | SR27            | SR30           | SR40            | SR50            |     |    |      |    |     |      |     |     |      |     |     |    |
|-------------------------|--------------------------------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----|----|------|----|-----|------|-----|-----|------|-----|-----|----|
| AVX “Insertable”        | SR07                                 | SR29            | SR59            | N/A             | N/A             | SR65           | SR75            | N/A             |     |    |      |    |     |      |     |     |      |     |     |    |
| Width<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 |     |     |    |
|                         |                                      | 200             | 100             | 50              | 200             | 100            | 50              | 200             | 100 | 50 | 100  | 50 | 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/SkyCap®/SR Series



## Z5U Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic

Dimensions: Millimeters (Inches)

| AVX Style                                         | SR15           | SR20            | SR21            | SR22            | SR27            | SR30           | SR40            | SR50            |
|---------------------------------------------------|----------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|
| AVX "Insertable"                                  | SR07           | SR29            | SR59            | N/A             | N/A             | SR65           | SR75            | N/A             |
| Width (W)                                         | 3.81<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>100 50 |                 | WVDC<br>100 50  |                 | WVDC<br>100 50  |                | WVDC<br>100 50  |                 |
| 10,000 SR15E103ZAR                                |                |                 |                 |                 |                 |                |                 |                 |
| 47,000 SR.....E473ZAR                             |                |                 |                 |                 |                 |                |                 |                 |
| 100,000 SR215E104ZAR                              |                |                 |                 |                 |                 |                |                 |                 |
| 150,000 SR.....E154ZAR                            |                |                 |                 |                 |                 |                |                 |                 |
| 220,000 SR215E224ZAR                              |                |                 |                 |                 |                 |                |                 |                 |
| 330,000 SR215E334ZAR                              |                |                 |                 |                 |                 |                |                 |                 |
| 470,000 SR215E474ZAR                              |                |                 |                 |                 |                 |                |                 |                 |
| 680,000 SR.....E684ZAR                            |                |                 |                 |                 |                 |                |                 |                 |
| 1.0 µF SR.....105ZAR                              |                |                 |                 |                 |                 |                |                 |                 |
| 1.5 µF SR30E155ZAR                                |                |                 |                 |                 |                 |                |                 |                 |
| 2.2 µF SR30E225ZAR                                |                |                 |                 |                 |                 |                |                 |                 |
| 3.3 µF SR30E335ZAR                                |                |                 |                 |                 |                 |                |                 |                 |
| 4.7 µF SR30E475ZAR                                |                |                 |                 |                 |                 |                |                 |                 |

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

\*Other capacitance values available upon special request.

 = Industry preferred values  
 = SR20 only

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 (NP0)                 | 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  |
| SR50                 | .036 µF                   | .59 µF  |

\*Consult pages 27 and 28 for style sizes.

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

