

# Radial Leads/SkyCap®/AR Series



## AUTOMOTIVE

### GENERAL INFORMATION

**AVX AR Series**

**Conformally Coated Radial Ledged MLC**

**Temperature Coefficients:** COG (NP0), X7R, X8R

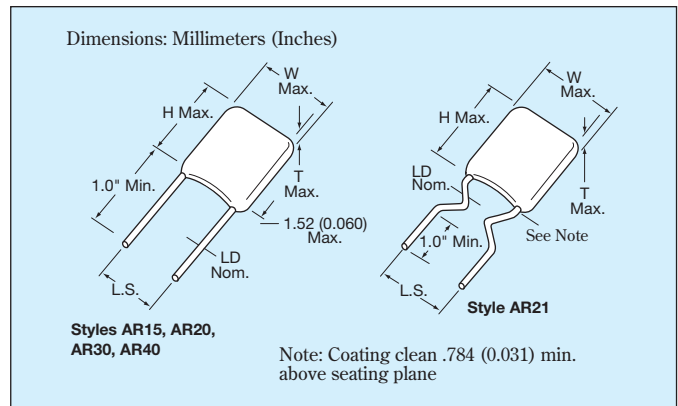
**3000, 2000, 1000, 200, 100, 50 Volts**

**Case Material:** Epoxy

**Lead Material:** RoHS Compliant, 100% Tin

**Qualified:** to AEC-Q200, PPAP Available

**Temperature Range:** up to 150°C



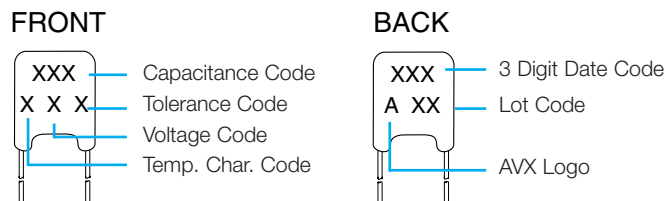
Drawings are for illustrative purposes only.  
Actual lead form shape could vary within stated tolerances based on body size.

### HOW TO ORDER

|                  |  |                                     |   |  |  |              |  |
|------------------|--|-------------------------------------|---|--|--|--------------|--|
| <b>AR21</b>      | <b>5</b>   | <b>F</b>                            | <b>104</b>  | <b>M</b>   | <b>4</b>   | <b>R</b>     | <b>TR1</b>   |
| <b>AVX Style</b> | <b>Voltage</b>   | <b>Temperature Coefficient</b>      | <b>Capacitance</b>  | <b>Capacitance Tolerance</b>   | <b>Failure Rate</b>  | <b>Leads</b> | <b>Packaging</b>   |
|                  | 5 = 50V<br>1 = 100V<br>2 = 200V<br>A = 1000V<br>G = 2000V<br>H = 3000V | A = COG (NP0)<br>C = X7R<br>F = X8R | 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) | COG (NP0):<br>C = ±.25pF<br>D = ±.5pF<br>F = ±1% (>50pF only)<br>G = ±2% (>25pF only)<br>J = ±5%<br>K = ±10% | X7R:<br>J = ±5%<br>K = ±10%<br>M = ±20%<br><br>X8R:<br>J = ±5%<br>K = ±10%<br>M = ±20% | 4 = AEC-Q200 | R = RoHS Long Lead 1.0" minimum<br><br>Blank = Bulk Packaging<br>T = Trimmed Leads .230"± .030" Bulk packaging<br>TR1 = Tape and Reel Packaging<br>AP1 = Ammopack Packaging<br><br>See packaging specification page 33-34. |



### MARKING



### PACKAGING REQUIREMENTS

|                  | Quantity per Bag |
|------------------|------------------|
| AR15, 20, 21, 30 | 1000 Pieces      |
| AR40             | 500 Pieces       |

Note: AR15, AR20, AR21, AR30, and AR40 available on tape and reel per EIA specifications RS-468. See pages 33 and 34.



# Radial Leads/AR Series

## C0G (NP0) Dielectric



### SIZE AND CAPACITANCE SPECIFICATIONS

| EIA Characteristic          |                                   | Dimensions: Millimeters (Inches) |     |    |                 |     |    |                 |     |    |
|-----------------------------|-----------------------------------|----------------------------------|-----|----|-----------------|-----|----|-----------------|-----|----|
| AVX Style                   |                                   | AR15                             |     |    | AR20            |     |    | AR21            |     |    |
| AVX "Insertable"            |                                   | AR07                             |     |    | AR29            |     |    | AR59            |     |    |
| <b>Width (W)</b>            |                                   | 3.81<br>(.150)                   |     |    | 5.08<br>(.200)  |     |    | 5.08<br>(.200)  |     |    |
| <b>Height (H)</b>           |                                   | 3.81<br>(.150)                   |     |    | 5.08<br>(.200)  |     |    | 5.08<br>(.200)  |     |    |
| <b>Thickness (T)</b>        |                                   | 2.54<br>(.100)                   |     |    | 3.175<br>(.125) |     |    | 3.175<br>(.125) |     |    |
| <b>Lead Spacing (L.S.)</b>  |                                   | 2.54<br>(.100)                   |     |    | 2.54<br>(.100)  |     |    | 5.08<br>(.200)  |     |    |
| <b>Lead Diameter (L.D.)</b> |                                   | .508<br>(.020)                   |     |    | .508<br>(.020)  |     |    | .508<br>(.020)  |     |    |
| Cap in pF                   | Industry Preferred Values in Blue | WVDC                             |     |    | WVDC            |     |    | WVDC            |     |    |
|                             |                                   | 200                              | 100 | 50 | 200             | 100 | 50 | 200             | 100 | 50 |
| 1                           | AR.....A1R0D4R                    |                                  |     |    |                 |     |    |                 |     |    |
| <b>10</b>                   | <b>AR.....A100K4R</b>             |                                  |     |    |                 |     |    |                 |     |    |
| 15                          | AR.....A150K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 22                          | AR.....A220K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 33                          | AR.....A330K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 39                          | AR.....A390K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 47                          | AR.....A470K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 68                          | AR.....A680K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| <b>100</b>                  | <b>AR.....A101K4R</b>             |                                  |     |    |                 |     |    |                 |     |    |
| 150                         | AR.....A151K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 220                         | AR.....A221K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 330                         | AR.....A331K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 390                         | AR.....A391K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 470                         | AR.....A471K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 680                         | AR.....A681K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| <b>1,000</b>                | <b>AR.....A102K4R</b>             |                                  |     |    |                 |     |    |                 |     |    |
| 1,500                       | AR.....A152K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 2,200                       | AR.....A222K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 3,900                       | AR.....A392K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| <b>4,700</b>                | <b>AR.....A472K4R</b>             |                                  |     |    |                 |     |    |                 |     |    |
| 6800                        | AR.....A682K4R                    |                                  |     |    |                 |     |    |                 |     |    |
| 8200                        | AR.....A822K4R                    |                                  |     |    |                 |     |    |                 |     |    |

**Notes:**  
 "Insertable" make reference to alternative AVX style using the same range of capacitance available on the matrix.  
 For others Styles, voltages, tolerance and lead lengths see Skycap catalog or contact factory.  
 Others capacitance values available upon special request.  
 Others styles available: AR12, AR14, AR62, AR89.



# Radial Leads/AR Series



## X7R Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic Dimensions: Millimeters (Inches)

|                      | AVX Style                         | AR15           | AR20            | AR21            | AR30           | AR40            |
|----------------------|-----------------------------------|----------------|-----------------|-----------------|----------------|-----------------|
|                      | AVX "Insertable"                  | AR07           | AR29            | AR59            | AR65           | AR75            |
| Width (W)            |                                   | 3.81<br>(.150) | 5.08<br>(.200)  | 5.08<br>(.200)  | 7.62<br>(.300) | 10.16<br>(.400) |
| Height (H)           |                                   | 3.81<br>(.150) | 5.08<br>(.200)  | 5.08<br>(.200)  | 7.62<br>(.300) | 10.16<br>(.400) |
| Thickness (T)        |                                   | 2.54<br>(.100) | 3.175<br>(.125) | 3.175<br>(.125) | 3.81<br>(.150) | 3.81<br>(.150)  |
| Lead Spacing (L.S.)  |                                   | 2.54<br>(.100) | 2.54<br>(.100)  | 5.08<br>(.200)  | 5.08<br>(.200) | 5.08<br>(.200)  |
| Lead Diameter (L.D.) |                                   | .508<br>(.020) | .508<br>(.020)  | .508<br>(.020)  | .508<br>(.020) | .508<br>(.020)  |
| Cap in pF            | Industry Preferred Values in Blue | WVDC 100 50    | WVDC 100 50     | WVDC 100 50     | WVDC 100 50    | WVDC 100 50     |
| 470                  | AR....C471K4R                     |                |                 |                 |                |                 |
| <b>1000</b>          | <b>AR....C102K4R</b>              |                |                 |                 |                |                 |
| 1500                 | AR....C152K4R                     |                |                 |                 |                |                 |
| 2200                 | AR....C222K4R                     |                |                 |                 |                |                 |
| 3300                 | AR....C332K4R                     |                |                 |                 |                |                 |
| 4700                 | AR....C472K4R                     |                |                 |                 |                |                 |
| 6800                 | AR....C682K4R                     |                |                 |                 |                |                 |
| <b>10,000</b>        | <b>AR....C103K4R</b>              |                |                 |                 |                |                 |
| 15,000               | AR....C153K4R                     |                |                 |                 |                |                 |
| 22,000               | AR....C223K4R                     |                |                 |                 |                |                 |
| 33,000               | AR....C333K4R                     |                |                 |                 |                |                 |
| 47,000               | AR....C473K4R                     |                |                 |                 |                |                 |
| 68,000               | AR....C683K4R                     |                |                 |                 |                |                 |
| <b>100,000</b>       | <b>AR....C104K4R</b>              |                |                 |                 |                |                 |
| 150,000              | AR....C154K4R                     |                |                 |                 |                |                 |
| 220,000              | AR....C224K4R                     |                |                 |                 |                |                 |
| 330,000              | AR....C334K4R                     |                |                 |                 |                |                 |
| 390,000              | AR....C394K4R                     |                |                 |                 |                |                 |
| 470,000              | AR....C474K4R                     |                |                 |                 |                |                 |
| 680,000              | AR....C684K4R                     |                |                 |                 |                |                 |
| <b>1.0 uF</b>        | <b>AR....C105K4R</b>              |                |                 |                 |                |                 |
| 4,700,000            | AR....C475K4R                     |                |                 |                 |                |                 |
| 6,800,000            | AR....C685K4R                     |                |                 |                 |                |                 |
| <b>10.0 uF</b>       | <b>AR....C106K4R</b>              |                |                 |                 |                |                 |

= Extended range with 0.150" thickness maximum

**Notes:**

"Insertable" make reference to alternative AVX style using the same range of capacitance available on the matrix.

For others Styles, voltages, tolerance and lead lengths see Skycap catalog or contact factory.

Others capacitance values available upon special request.

Others styles available: AR12, AR14, AR62, AR89, AR32, AR38.



# Radial Leads/AR Series

## X8R Dielectric



### SIZE AND CAPACITANCE SPECIFICATIONS

| EIA Characteristic   |                                   | Dimensions: Millimeters (Inches) |     |                 |      |     |    |
|----------------------|-----------------------------------|----------------------------------|-----|-----------------|------|-----|----|
| AVX Style            |                                   | AR20                             |     | AR21            |      |     |    |
| AVX "Insertable"     |                                   | AR29                             |     | AR59            |      |     |    |
| Width (W)            |                                   | 5.08<br>(.200)                   |     | 5.08<br>(.200)  |      |     |    |
| Height (H)           |                                   | 5.08<br>(.200)                   |     | 5.08<br>(.200)  |      |     |    |
| Thickness (T)        |                                   | 3.175<br>(.125)                  |     | 3.175<br>(.125) |      |     |    |
| Lead Spacing (L.S.)  |                                   | 2.54<br>(.100)                   |     | 5.08<br>(.200)  |      |     |    |
| Lead Diameter (L.D.) |                                   | .508<br>(.020)                   |     | .508<br>(.020)  |      |     |    |
| Cap in pF            | Industry Preferred Values in Blue | WVDC                             |     |                 | WVDC |     |    |
|                      |                                   | 200                              | 100 | 50              | 200  | 100 | 50 |
| 1,000                | AR.....F102K4R                    |                                  |     |                 |      |     |    |
| 10,000               | AR.....F103K4R                    |                                  |     |                 |      |     |    |
| 100,000              | AR.....F104K4R                    |                                  |     |                 |      |     |    |
| 330,000              | AR.....F334K4R                    |                                  |     |                 |      |     |    |

**Notes:**  
 "Insertable" make reference to alternative AVX style using the same range of capacitance available on the matrix.  
 For others Styles, voltages, tolerance and lead lengths see Skycap catalog or contact factory.  
 Others capacitance values available upon special request.  
 Others styles available: AR14, AR62, AR89.

# High Voltage Automotive Product SkyCap Capacitors



## X7R Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

EIA Characteristic Dimensions: Millimeters (Inches)

|               | AVX Style                            | AR20         | AR21         | AR22         | AR27         | AR30              |
|---------------|--------------------------------------|--------------|--------------|--------------|--------------|-------------------|
|               | AVX "Insertable"                     | AR29         | AR59         | N/A          | N/A          | AR65              |
| Cap<br>in pF  | Industry Preferred<br>Values in Blue | WVDC<br>1000 | WVDC<br>1000 | WVDC<br>1000 | WVDC<br>1000 | WVDC<br>2000 3000 |
| 470           | AR.....C471K4R                       |              |              |              |              |                   |
| <b>1000</b>   | <b>AR.....C102K4R</b>                |              |              |              |              |                   |
| 1500          | AR.....C152K4R                       |              |              |              |              |                   |
| 2200          | AR.....C222K4R                       |              |              |              |              |                   |
| 3300          | AR.....C332K4R                       |              |              |              |              |                   |
| 4700          | AR.....C472K4R                       |              |              |              |              |                   |
| 6800          | AR.....C682K4R                       |              |              |              |              |                   |
| <b>10,000</b> | <b>AR.....C103K4R</b>                |              |              |              |              |                   |
| 15,000        | AR.....C153K4R                       |              |              |              |              |                   |
| 22,000        | AR.....C223K4R                       |              |              |              |              |                   |
| 47,000        | AR.....C473K4R                       |              |              |              |              |                   |
| 68,000        | AR.....C683K4R                       |              |              |              |              |                   |

For others Styles, voltages, tolerance and lead lengths see Skycap catalog or contact factory.

