

GENERAL INFORMATION

**AVX AR Series**

**Conformally Coated Radial Ledged MLC**

**Temperature Coefficients:** C0G (NP0), X7R, X8R

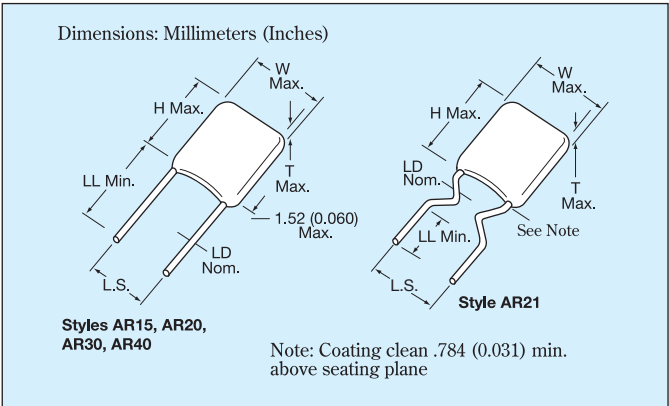
**3000, 2000, 1000, 200, 100, 50 Volts**

**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

AR21

AVX Style

5

Voltage

5 = 50V  
1 = 100V  
2 = 200V  
A = 1000V  
G = 2000V  
H = 3000V

F

Temperature Coefficient

A = C0G (NP0)  
C = X7R  
F = X8R  
L = X8L

104

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.)

M

Capacitance Tolerance

C0G (NP0):  
C = ±.25pF  
D = ±.5pF  
F = ±1%  
(>50pF only)  
G = ±2%  
(>25pF only)  
J = ±5%  
K = ±10%  
X7R:  
J = ±5%  
K = ±10%  
M = ±20%  
X8R:  
J = ±5%  
K = ±10%  
M = ±20%

4

Failure Rate

4 = AEC-Q200

R

Leads

R = RoHS

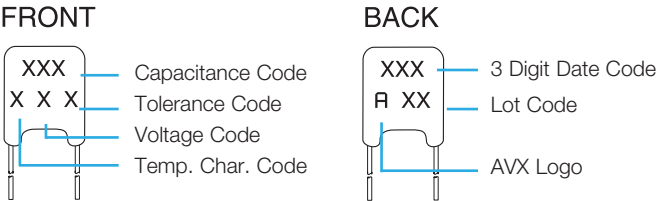
TR1

Packaging

Blank: Bulk Packaging 1.0" minimum of lead length  
T: Trimmed leads .230" ± .030"  
Bulk packaging  
TR1: Tape and Reel Packaging  
AP1: Ammopack packaging  
  
See packaging specification pages 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

## C0G (NP0) Dielectric



### SIZE AND CAPACITANCE SPECIFICATIONS

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

## 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.<br>in. pF       | Industry Preferred<br>Values in Blue | WVDC           |    | WVDC            |    | WVDC            |    | WVDC           |    | WVDC            |    |
|                      |                                      | 100            | 50 | 100             | 50 | 100             | 50 | 100            | 50 | 100             | 50 |
| 470                  | AR----C471K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 1000                 | AR----C102K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 1500                 | AR----C152K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 2200                 | AR----C222K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 3300                 | AR----C332K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 4700                 | AR----C472K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 6800                 | AR----C682K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 10,000               | AR----C103K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 15,000               | AR----C153K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 22,000               | AR----C223K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 33,000               | AR----C333K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 47,000               | AR----C473K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 68,000               | AR----C683K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 100,000              | AR----C104K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 150,000              | AR----C154K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 220,000              | AR----C224K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 330,000              | AR----C334K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 390,000              | AR----C394K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 470,000              | AR----C474K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 680,000              | AR----C684K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 1.0 uF               | AR----C105K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 4,700,000            | AR----C475K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 6,800,000            | AR----C685K4R                        |                |    |                 |    |                 |    |                |    |                 |    |
| 10.0 uF              | AR----C106K4R                        |                |    |                 |    |                 |    |                |    |                 |    |

 = 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

X8R Dielectric “F”



GENERAL INFORMATION

AVX AR Series

Conformally Coated Radial Ledged MLC

Temperature Coefficients: C0G (NP0), X7R, X8R

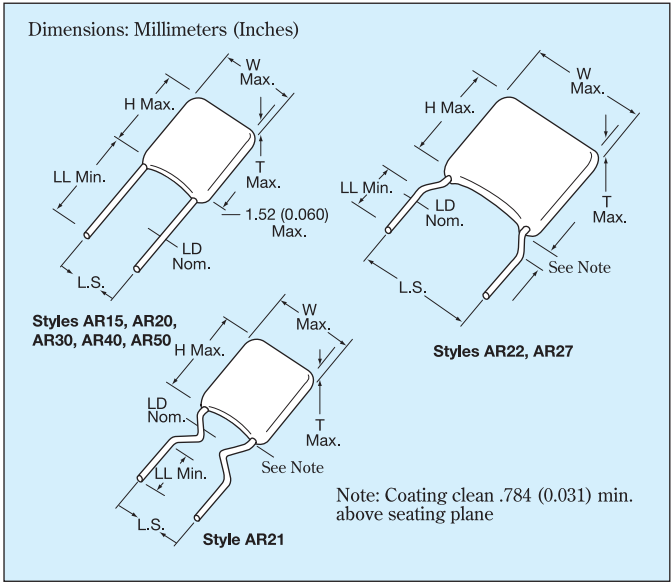
200, 100, 50 Volts

Case Material: Epoxy

Lead Material: Solderable

Qualified: to AEC-Q200

Temperature Range: up to 150°C



HOW TO ORDER

AR21

AVX Style

5

Voltage

5 = 50V  
1 = 100V  
2 = 200V

F

Temperature Coefficient

F = X8R

104

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.)

M

Capacitance Tolerance

X8R:  
J = ±5%  
K = ±10%  
M = ±20%

4

Failure Rate

4 = AEC-Q200

R

Leads

R = RoHS

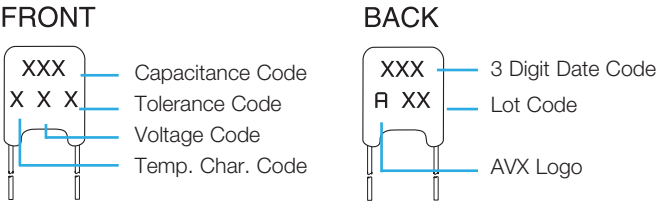
TR1

Packaging

Blank: Bulk Packaging 1.0” minimum of lead length  
T: Trimmed leads .230” ± .030”  
Bulk packaging  
TR1: Tape and Reel Packaging  
AP1: Ammopack packaging

See packaging specification pages 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

X8R Dielectric



SIZE AND CAPACITANCE SPECIFICATIONS

EIA CharacteristicDimensions: Millimeters (Inches)

| AVX Style            |                                   | AR20         |     |    | AR21         |     |    |
|----------------------|-----------------------------------|--------------|-----|----|--------------|-----|----|
| AVX "Insertable"     |                                   | AR29         |     |    | AR59         |     |    |
| Width (W)            |                                   | 5.08 (.200)  |     |    | 5.08 (.200)  |     |    |
| Height (H)           |                                   | 5.08 (.200)  |     |    | 5.08 (.200)  |     |    |
| Thickness (T)        |                                   | 3.175 (.125) |     |    | 3.175 (.125) |     |    |
| Lead Spacing (L.S.)  |                                   | 2.54 (.100)  |     |    | 5.08 (.200)  |     |    |
| Lead Diameter (L.D.) |                                   | .508 (.020)  |     |    | .508 (.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.

RADIAL LEADS

X8L Dielectric



STYLES AND CAPACITANCE SPECIFICATIONS

EIA Chacteristics

| AVX Style        |                           | AR15 |    | AR20 |    | AR21 |    |
|------------------|---------------------------|------|----|------|----|------|----|
| AVX "Insertable" |                           | AR07 |    | AR29 |    | AR59 |    |
| Cap. in pF       | Industry Preferred Values | WVDC |    | WVDC |    | WVDC |    |
|                  |                           | 100  | 50 | 100  | 50 | 100  | 50 |
| 470              | AR____L471K4R             |      |    |      |    |      |    |
| 1,000            | AR____L102K4R             |      |    |      |    |      |    |
| 1,500            | AR____L152K4R             |      |    |      |    |      |    |
| 2,200            | AR____L222K4R             |      |    |      |    |      |    |
| 3,300            | AR____L332K4R             |      |    |      |    |      |    |
| 4,700            | AR____L472K4R             |      |    |      |    |      |    |
| 6,800            | AR____L682K4R             |      |    |      |    |      |    |
| 10,000           | AR____L103K4R             |      |    |      |    |      |    |
| 15,000           | AR____L153K4R             |      |    |      |    |      |    |
| 22,000           | AR____L223K4R             |      |    |      |    |      |    |
| 33,000           | AR____L333K4R             |      |    |      |    |      |    |
| 47,000           | AR____L473K4R             |      |    |      |    |      |    |
| 68,000           | AR____L683K4R             |      |    |      |    |      |    |
| 100,000          | AR____L104K4R             |      |    |      |    |      |    |
| 150,000          | AR____L154K4R             |      |    |      |    |      |    |
| 220,000          | AR____L224K4R             |      |    |      |    |      |    |
| 330,000          | AR____L334K4R             |      |    |      |    |      |    |
| 390,000          | AR____L394K4R             |      |    |      |    |      |    |
| 470,000          | AR____L474K4R             |      |    |      |    |      |    |
| 680,000          | AR____L684K4R             |      |    |      |    |      |    |
| 1.0 uF           | AR____L105K4R             |      |    |      |    |      |    |
| 4700,000         | AR____L475K4R             |      |    |      |    |      |    |
| 6800,000         | AR____L685K4R             |      |    |      |    |      |    |
| 10.0 uF          | AR____L106K4R             |      |    |      |    |      |    |

SIZE AND CAPACITANCE SPECIFICATIONS

EIA CharacteristicDimensions: 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 |  |
|                |                                      | 2000         | 3000         |              |              |      |  |
| 470            | AR____C471K4R                        |              |              |              |              |      |  |
| 1000           | AR____C102K4R                        |              |              |              |              |      |  |
| 1500           | AR____C152K4R                        |              |              |              |              |      |  |
| 2200           | AR____C222K4R                        |              |              |              |              |      |  |
| 3300           | AR____C332K4R                        |              |              |              |              |      |  |
| 4700           | AR____C472K4R                        |              |              |              |              |      |  |
| 6800           | AR____C682K4R                        |              |              |              |              |      |  |
| 10,000         | AR____C103K4R                        |              |              |              |              |      |  |
| 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.

# RADIAL LEADS

## SkyCap® Configurations by Lead Spacing



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

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

\*SL style available in all SR configurations.

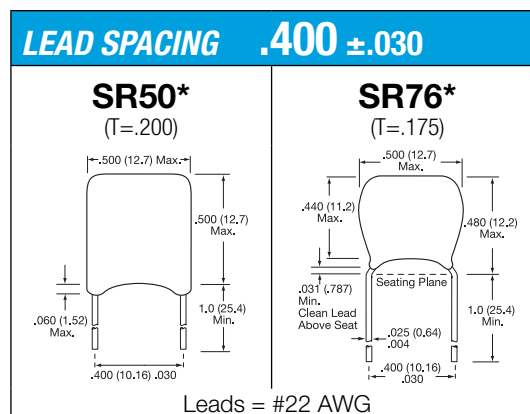
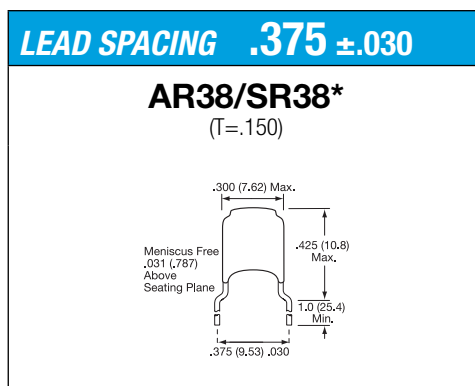
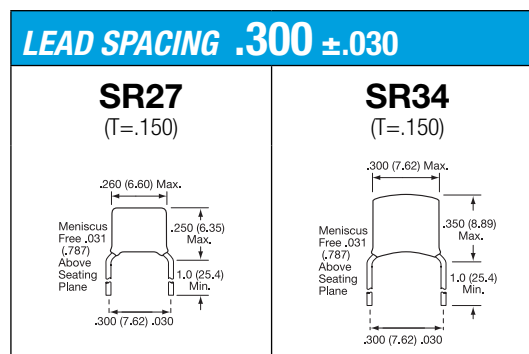
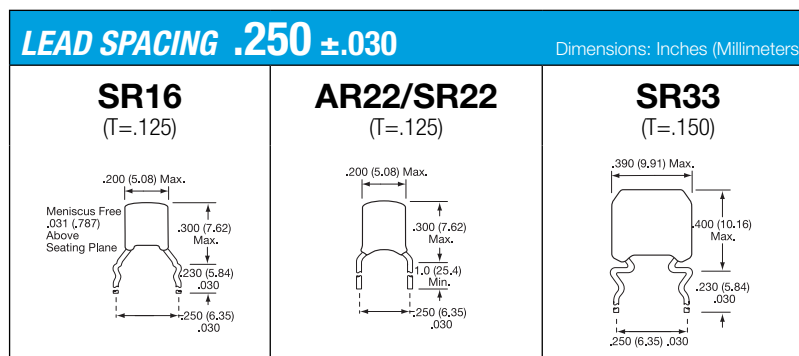
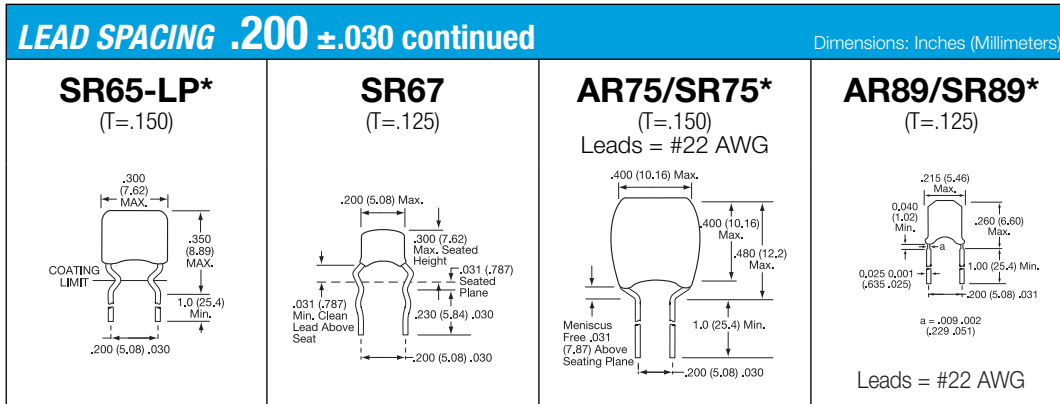


The Important Information/Disclaimer is incorporated in these specifications by reference and should be reviewed in full before placing any order.



# RADIAL LEADS

## SkyCap® Configurations by Lead Spacing



- NOTES:**
1. All leads are #24 AWG unless otherwise noted.
  2. Available in tape and reel packaging(\*)
  3. Other styles are also available, contact factory.
  4. (T = XXX) under type designation is maximum thickness in inches.

\*SL style available in all SR configurations.

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

## IMPORTANT INFORMATION/DISCLAIMER

All product specifications, statements, information and data (collectively, the “Information”) in this datasheet or made available on the website are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on AVX’s knowledge of typical operating conditions for such applications, but are not intended to constitute and AVX specifically disclaims any warranty concerning suitability for a specific customer application or use.

**ANY USE OF PRODUCT OUTSIDE OF SPECIFICATIONS OR ANY STORAGE OR INSTALLATION INCONSISTENT WITH PRODUCT GUIDANCE VOIDS ANY WARRANTY.**

The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by AVX with reference to the use of AVX’s products is given without regard, and AVX assumes no obligation or liability for the advice given or results obtained.

Although AVX designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Unless specifically agreed to in writing, AVX has not tested or certified its products, services or deliverables for use in high risk applications including medical life support, medical device, direct physical patient contact, water treatment, nuclear facilities, weapon systems, mass and air transportation control, flammable environments, or any other potentially life critical uses. Customer understands and agrees that AVX makes no assurances that the products, services or deliverables are suitable for any high-risk uses. Under no circumstances does AVX warrant or guarantee suitability for any customer design or manufacturing process.

Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.