

## RADIAL LEADS

## SkyCap®/AR Series – Automotive

## GENERAL INFORMATION

## AVX AR Series

## Conformally Coated Radial Leaded MLC

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

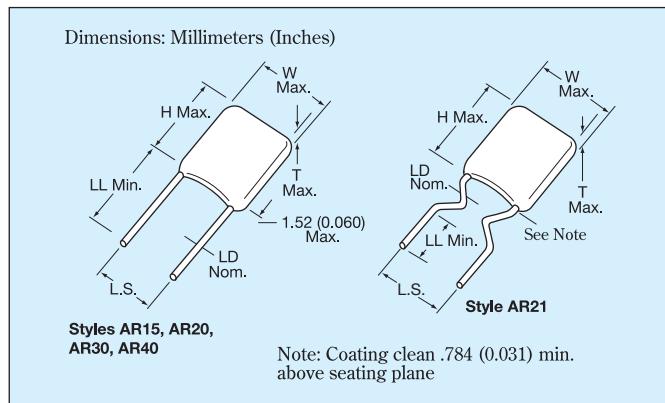
3000, 2000, 1000, 200, 100, 50 Volts

## 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.

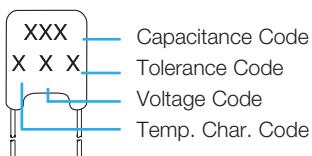
## HOW TO ORDER

AR21	5	F	104	M	4	R	TR1
<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				C0G (NPO):	4 = AEC-Q200	R = RoHS	Blank: Bulk Packaging 1.0" minimum of lead length
1 = 100V		A = C0G (NPO)		C = $\pm .25\text{pF}$	J = $\pm 5\%$		T: Trimmed leads .230" $\pm .030"$
2 = 200V		C = X7R		D = $\pm .5\text{pF}$	K = $\pm 10\%$		Bulk packaging
A = 1000V		F = X8R		F = $\pm 1\%$	M = $\pm 20\%$		TR1: Tape and Reel Packaging
G = 2000V		L = X8L		( $>50\text{pF}$ only)			AP1: Ammopack packaging
H = 3000V				G = $\pm 2\%$	X8R:		
				( $>25\text{pF}$ only)	J = $\pm 5\%$		
				J = $\pm 5\%$	K = $\pm 10\%$		
				K = $\pm 10\%$	M = $\pm 20\%$		
							See packaging specification pages 33-34

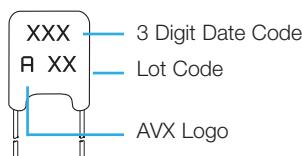


## MARKING

## FRONT



## BACK



## 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 (.150)			5.08 (.200)			5.08 (.200)		
Height (H)		3.81 (.150)			5.08 (.200)			5.08 (.200)		
Thickness (T)		2.54 (.100)			3.175 (.125)			3.175 (.125)		
Lead Spacing (L.S.)		2.54 (.100)			2.54 (.100)			5.08 (.200)		
Lead Diameter (L.D.)		.508 (.020)			.508 (.020)			.508 (.020)		
Cap. in. pF	Industry Preferred Values in Blue	WVDC			WVDC			WVDC		
		200	100	50	200	100	50	200	100	50
1	AR----A1R0D4R									
10	<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.



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

# 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 (.150)	5.08 (.200)	5.08 (.200)	7.62 (.300)	10.16 (.400)						
Height (H)	3.81 (.150)	5.08 (.200)	5.08 (.200)	7.62 (.300)	10.16 (.400)						
Thickness (T)	2.54 (.100)	3.175 (.125)	3.175 (.125)	3.81 (.150)	3.81 (.150)						
Lead Spacing (L.S.)	2.54 (.100)	2.54 (.100)	5.08 (.200)	5.08 (.200)	5.08 (.200)						
Lead Diameter (L.D.)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)	.508 (.020)						
Cap. in. pF	Industry Preferred Values in Blue	WVDC		WVDC		WVDC		WVDC		WVDC	
		100	50	100	50	100	50	100	50	100	50
470	AR----C471K4R										
1000	<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

## X8R Dielectric "F"



### GENERAL INFORMATION

#### AVX AR Series

#### Conformally Coated Radial Leaded MLC

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

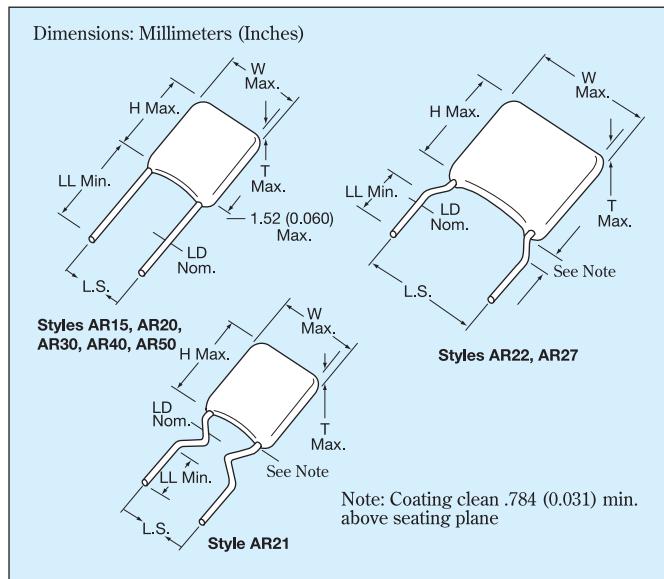
**200, 100, 50 Volts**

**Case Material:** Epoxy

**Lead Material:** Solderable

**Qualified:** to AEC-Q200

**Temperature Range:** up to 150°C



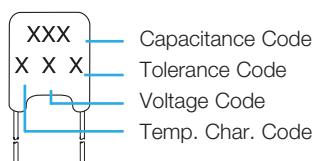
### HOW TO ORDER

<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 1 = 100V 2 = 200V	5 = 50V 1 = 100V 2 = 200V	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.)	X8R: J = ±5% K = ±10% M = ±20%	4 = AEC-Q200	R = RoHS	Blank: Bulk Packaging 1.0" minimum of lead length T: Trimmed leads .230" ± .030" TR1: Tape and Reel Packaging AP1: Ammopack packaging
							See packaging specification pages 33-34

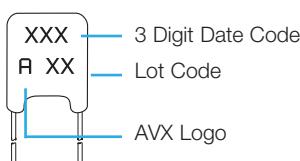


### MARKING

#### FRONT



#### BACK



### PACKAGING REQUIREMENTS

	<b>Quantity per Bag</b>
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 Characteristic Dimensions: 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						
<b>1,000</b>	<b>AR_____L102K4R</b>						
1,500	AR_____L152K4R						
2,200	AR_____L222K4R						
3,300	AR_____L332K4R						
4,700	AR_____L472K4R						
6,800	AR_____L682K4R						
<b>10,000</b>	<b>AR_____L103K4R</b>						
15,000	AR_____L153K4R						
22,000	AR_____L223K4R						
33,000	AR_____L333K4R						
47,000	AR_____L473K4R						
68,000	AR_____L683K4R						
<b>100,000</b>	<b>AR_____L104K4R</b>						
150,000	AR_____L154K4R						
220,000	AR_____L224K4R						
330,000	AR_____L334K4R						
390,000	AR_____L394K4R						
470,000	AR_____L474K4R						
680,000	AR_____L684K4R						
<b>1.0 uF</b>	<b>AR_____L105K4R</b>						
4700,000	AR_____L475K4R						
6800,000	AR_____L685K4R						
<b>10.0 uF</b>	<b>AR_____L106K4R</b>						

# RADIAL LEADS

## 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. in. pF	Industry Preferred Values in Blue	WVDC 1000	WVDC 1000	WVDC 1000	WVDC 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> (T=.100)	<b>AR14/SR14</b> (T=.100)	<b>AR15/SR15*</b> (T=.100)	<b>AR20/SR20*</b> (T=.125)
<b>AR29/SR29*</b> (T=.125)	<b>AR62/SR62*</b> (T=.125)	<b>SR62-LP*</b> (T=.100)	
		Leads = #22 AWG	Leads = #22 AWG

### LEAD SPACING .200 ±.030

Dimensions: Inches (Millimeters)

<b>AR12/SR12*</b> (T=.100)	<b>SR13*</b> (T=.125)	<b>AR21/SR21*</b> (T=.125)	<b>SR21-85*</b> (T=.125)	<b>SR28*</b> (T=.125)
<b>AR30/SR30*</b> (T=.150)	<b>SR30-LP*</b> (T=.150)	<b>AR32/SR32*</b> (T=.150)	<b>AR40/SR40*</b> (T=.150)	<b>AR59/SR59*</b> (T=.125)
<b>SR61</b> (T=.150)	<b>SR63*</b> (T=.150)	<b>SR64*</b> (T=.150)	<b>SR64-LP*</b> (T=.150)	<b>AR65/SR65*</b> (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

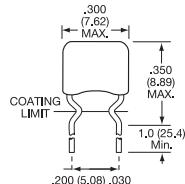
## SkyCap® Configurations by Lead Spacing



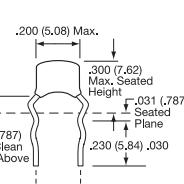
### LEAD SPACING .200 ±.030 continued

Dimensions: Inches (Millimeters)

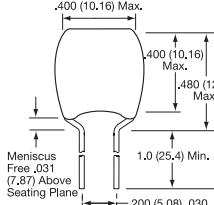
**SR65-LP\***  
(T=.150)



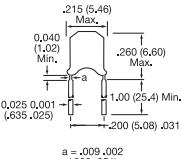
**SR67**  
(T=.125)



**AR75/SR75\***  
(T=.150)  
Leads = #22 AWG



**AR89/SR89\***  
(T=.125)

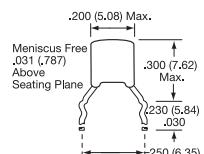


Leads = #22 AWG

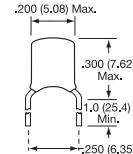
### LEAD SPACING .250 ±.030

Dimensions: Inches (Millimeters)

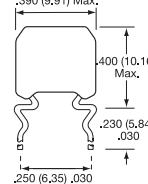
**SR16**  
(T=.125)



**AR22/SR22**  
(T=.125)

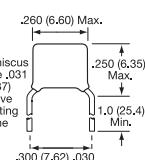


**SR33**  
(T=.150)

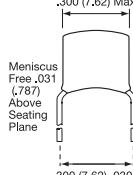


### LEAD SPACING .300 ±.030

**SR27**  
(T=.150)

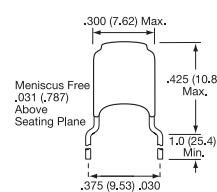


**SR34**  
(T=.150)



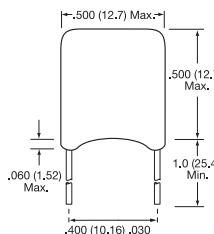
### LEAD SPACING .375 ±.030

**AR38/SR38\***  
(T=.150)

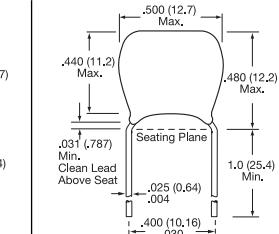


### LEAD SPACING .400 ±.030

**SR50\***  
(T=.200)



**SR76\***  
(T=.175)



Leads = #22 AWG

**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

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