

# Axial Leads/SpinGuard®



## C0G (NP0) Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

| AVX Style            |                                              | SA05             |     | SA10             |     |    | SA11             |    |     | SA20             |     | SA30             |     | SA40             |  |
|----------------------|----------------------------------------------|------------------|-----|------------------|-----|----|------------------|----|-----|------------------|-----|------------------|-----|------------------|--|
| Length (L)           |                                              | 3.00<br>(.118")  |     | 4.32<br>(.170")  |     |    | 4.32<br>(.170")  |    |     | 6.60<br>(.260")  |     | 7.37<br>(.290")  |     | 10.16<br>(.400") |  |
| Diameter (D)         |                                              | 2.30<br>(.090")  |     | 2.54<br>(.100")  |     |    | 3.05<br>(.120")  |    |     | 2.54<br>(.100")  |     | 3.81<br>(.150")  |     | 3.81<br>(.150")  |  |
| Lead Diameter        |                                              | .445<br>(.0175") |     | .445<br>(.0175") |     |    | .445<br>(.0175") |    |     | .445<br>(.0175") |     | .445<br>(.0175") |     | .445<br>(.0175") |  |
| Lead Length          |                                              | 25.4<br>(1.00")  |     | 25.4<br>(1.00")  |     |    | 25.4<br>(1.00")  |    |     | 25.4<br>(1.00")  |     | 25.4<br>(1.00")  |     | 25.4<br>(1.00")  |  |
| Cap. in pF           | Typical AVX Part Nos.                        | WVDC             |     | WVDC             |     |    | WVDC             |    |     | WVDC             |     | WVDC             |     | WVDC             |  |
|                      |                                              | 200              | 100 | 200              | 100 | 50 | 100              | 50 | 100 | 50               | 100 | 50               | 100 | 50               |  |
| 1.0*<br>↓<br>9.1*    | SA102A1R0DAR<br>↓<br>SA102A9R1DAR            |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 10<br>12<br>15       | SA102A100JAR<br>SA102A120JAR<br>SA102A150JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 18<br>22<br>27       | SA102A180JAR<br>SA102A220JAR<br>SA102A270JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 33<br>39<br>47       | SA102A330JAR<br>SA102A390JAR<br>SA102A470JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 56<br>68<br>82       | SA102A560JAR<br>SA102A680JAR<br>SA102A820JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 100<br>120<br>150    | SA102A101JAR<br>SA102A121JAR<br>SA101A151JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 180<br>220<br>270    | SA101A181JAR<br>SA101A221JAR<br>SA101A271JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 330<br>390<br>470    | SA101A331JAR<br>SA101A391JAR<br>SA101A471JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 560<br>680<br>820    | SA101A561JAR<br>SA101A681JAR<br>SA101A821JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 1000<br>1200<br>1500 | SA105A102JAR<br>SA201A122JAR<br>SA201A152JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 1800<br>2200<br>2700 | SA205A182JAR<br>SA301A222JAR<br>SA301A272JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 3300<br>3900<br>4700 | SA301A332JAR<br>SA301A392JAR<br>SA305A472JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 5600<br>6800<br>8200 | SA401A562JAR<br>SA401A682JAR<br>SA405A822JAR |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |
| 10,000<br>12,000     | SA405A103JAR<br>SA405A123JAR                 |                  |     |                  |     |    |                  |    |     |                  |     |                  |     |                  |  |

For other tolerances see Part No. Codes  
For other voltages see Part No. Codes  
AVX Style

= Industry preferred values

\*"C&D" Tolerance Only



### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

| AVX Style     |                       | SA05             |     |    | SA10             |     |    | SA11             |    | SA20             |    | SA30             |    | SA40             |    |
|---------------|-----------------------|------------------|-----|----|------------------|-----|----|------------------|----|------------------|----|------------------|----|------------------|----|
| Length (L)    |                       | 3.00<br>(.118")  |     |    | 4.32<br>(.170")  |     |    | 4.32<br>(.170")  |    | 6.60<br>(.260")  |    | 7.37<br>(.290")  |    | 10.16<br>(.400") |    |
| Diameter (D)  |                       | 2.30<br>(.090")  |     |    | 2.54<br>(.100")  |     |    | 3.05<br>(.120")  |    | 2.54<br>(.100")  |    | 3.81<br>(.150")  |    | 3.81<br>(.150")  |    |
| Lead Diameter |                       | .445<br>(.0175") |     |    | .445<br>(.0175") |     |    | .445<br>(.0175") |    | .445<br>(.0175") |    | .445<br>(.0175") |    | .445<br>(.0175") |    |
| Lead Length   |                       | 25.4<br>(1.00")  |     |    | 25.4<br>(1.00")  |     |    | 25.4<br>(1.00")  |    | 25.4<br>(1.00")  |    | 25.4<br>(1.00")  |    | 25.4<br>(1.00")  |    |
| Cap. in pF    | Typical AVX Part Nos. | WVDC             |     |    | WVDC             |     |    | WVDC             |    | WVDC             |    | WVDC             |    | WVDC             |    |
|               |                       | 200              | 100 | 50 | 200              | 100 | 50 | 100              | 50 | 100              | 50 | 100              | 50 | 100              | 50 |
| 220           | SA102C221KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 270           | SA102C271KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 330           | SA102C331KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 390           | SA102C391KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 470           | SA102C471KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 560           | SA101C561KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 680           | SA101C681KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 820           | SA101C821KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 1000          | SA101C102KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 1200          | SA101C122KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 1500          | SA101C152KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 1800          | SA101C182KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 2200          | SA101C222KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 2700          | SA101C272KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 3300          | SA101C332KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 3900          | SA101C392KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 4700          | SA101C472KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 5600          | SA101C562KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 6800          | SA101C682KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 8200          | SA105C822KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 10,000        | SA105C103KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 12,000        | SA105C123KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 15,000        | SA105C153KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 18,000        | SA105C183KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 22,000        | SA105C223KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 27,000        | SA105C273KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 33,000        | SA105C333KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 39,000        | SA105C393KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 47,000        | SA105C473KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 56,000        | SA115C563KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 68,000        | SA115C683KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 82,000        | SA115C823KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 100,000       | SA115C104KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 120,000       | SA305C124KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 150,000       | SA305C154KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 180,000       | SA305C184KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 220,000       | SA305C224KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 270,000       | SA305C274KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 330,000       | SA305C334KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 470,000       | SA405C474KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |
| 1,000,000     | SA305C105KAR          |                  |     |    |                  |     |    |                  |    |                  |    |                  |    |                  |    |

For other tolerances see Part No. Codes  
 For other voltages see Part No. Codes  
 AVX Style

= Industry preferred values

# Axial Leads/SpinGuard®



## Z5U Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

| AVX Style                      | SA05                                         | SA10             | SA11             | SA20             | SA30             | SA40             |
|--------------------------------|----------------------------------------------|------------------|------------------|------------------|------------------|------------------|
| Length (L)                     | 3.00<br>(.118")                              | 4.32<br>(.170")  | 4.32<br>(.170")  | 6.60<br>(.260")  | 7.37<br>(.290")  | 10.16<br>(.400") |
| Diameter (D)                   | 2.30<br>(.090")                              | 2.54<br>(.100")  | 3.05<br>(.120")  | 2.54<br>(.100")  | 3.81<br>(.150")  | 3.81<br>(.150")  |
| Lead Diameter                  | .445<br>(.0175")                             | .445<br>(.0175") | .445<br>(.0175") | .445<br>(.0175") | .445<br>(.0175") | .445<br>(.0175") |
| Lead Length                    | 25.4<br>(1.00")                              | 25.4<br>(1.00")  | 25.4<br>(1.00")  | 25.4<br>(1.00")  | 25.4<br>(1.00")  | 25.4<br>(1.00")  |
| Cap. in pF                     | Typical AVX Part Nos.                        | WVDC 50          | WVDC 100 50      | WVDC 100 50      | WVDC 100 50      | WVDC 100 50      |
| 10,000<br>15,000<br>22,000     | SA105E103ZAR<br>SA105E153ZAR<br>SA105E223ZAR |                  |                  |                  |                  |                  |
| 33,000<br>47,000<br>68,000     | SA105E333ZAR<br>SA105E473ZAR<br>SA105E683ZAR |                  |                  |                  |                  |                  |
| *100,000<br>150,000<br>220,000 | SA105E104ZAR<br>SA105E154ZAR<br>SA105E224ZAR |                  |                  |                  |                  |                  |
| 330,000<br>470,000<br>680,000  | SA115E334ZAR<br>SA305E474ZAR<br>SA305E684ZAR |                  |                  |                  |                  |                  |
| 820,000<br>1,000,000           | SA305E824ZAR<br>SA305E105ZAR                 |                  |                  |                  |                  |                  |

For other tolerances see Part No. Codes  
For other voltages see Part No. Codes  
AVX Style

 = Industry preferred values

\*Preferred Industry Decoupling Capacitor — Insertable on .300" centers.

SA105E104ZAA

# Axial Leads/SpinGuard®



## X5R Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)



| AVX Style             |                       | SA10             |
|-----------------------|-----------------------|------------------|
| Length (L)            |                       | 4.32<br>(.170")  |
| Diameter (D)          |                       | 2.54<br>(.100")  |
| Lead Diameter         |                       | .445<br>(.0175") |
| Lead Length           |                       | 25.4<br>(1.00")  |
| Cap. in $\mu\text{F}$ | Typical AVX Part Nos. | WVDC 10          |
| 1.8                   | SA10ZD185KAR          |                  |
| 2.7                   | SA10ZD275KAR          |                  |
| 3.3                   | SA10ZD335KAR          |                  |
| 4.7                   | SA10ZD475KAR          |                  |

For other tolerances see Part No. Codes  
For other voltages see Part No. Codes  
AVX Style

 = Industry preferred values

# Axial Leads/SpinGuard®/AA Series



## Automotive

### GENERAL DESCRIPTION

#### AVX AA Series

##### Electrical Characteristics: AA101C103K4R

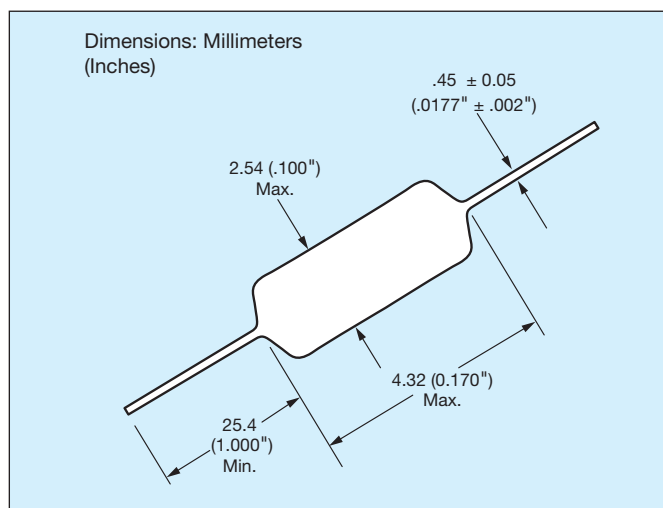
|                                              |              |
|----------------------------------------------|--------------|
| Capacitance @ 25°C, 1kHz, 1Vrms              | 0.0100μF     |
| Capacitance Tolerance                        | ±10 %        |
| Dissipation Factor @ 25°C                    | 2.5% Max     |
| Rated Voltage                                | 100Vdc       |
| Dielectric Withstand Voltage                 | 250Vdc       |
| Insulation Resistance @ 25°C @ Rated Voltage | 100000 Mohms |

##### Temperature Characteristics:

X7R (-55 to + 125°C ± 15% @ 0Vdc)

##### Lead Material:

RoHS Compliant 100% Tin



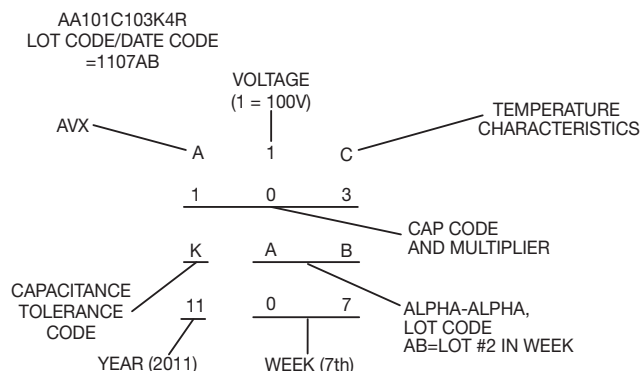
### HOW TO ORDER

|                |                |                                 |                  |                            |                                |                |
|----------------|----------------|---------------------------------|------------------|----------------------------|--------------------------------|----------------|
| <b>AA10</b>    | <b>1</b>       | <b>C</b>                        | <b>103</b>       | <b>K</b>                   | <b>4</b>                       | <b>R</b>       |
| Component Size | Voltage Rating | Temperature Characteristic Code | Capacitance Code | Capacitance Tolerance Code | Failure Rate<br>4 = Automotive | RoHS Compliant |



### MARKING (EXAMPLE)

SpinGuard marking includes full date code/lot code identification. A first in the industry, this format provides complete traceability to all manufacturing processes involving the basic chip and final assembly. Total Shipment traceability is also provided.



### PACKAGING REQUIREMENTS

Tape and Reel Ø 14": 7500 pieces

# Axial Leads/SpinGuard®/AA Series



Automotive — C0G (NP0) Dielectric

## SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)



| AVX Style       |                          | AA10          |             |    | AA30          |            |
|-----------------|--------------------------|---------------|-------------|----|---------------|------------|
| Length (L)      |                          | 4.32 (.170")  |             |    | 7.37 (.290")  |            |
| Diameter (D)    |                          | 2.54 (.100")  |             |    | 3.81 (.150")  |            |
| Lead Diameter   |                          | .445 (.0175") |             |    | .445 (.0175") |            |
| Lead Length     |                          | 25.4 (1.00")  |             |    | 25.4 (1.00")  |            |
| Cap. in *<br>pF | Typical AVX<br>Part Nos. | 200           | WVDC<br>100 | 50 | 100           | WVDC<br>50 |
| 100             | AA__A101K4R              |               |             |    |               |            |
| 120             | AA__A121K4R              |               |             |    |               |            |
| 150             | AA__A151K4R              |               |             |    |               |            |
| 180             | AA__A181K4R              |               |             |    |               |            |
| 220             | AA__A221K4R              |               |             |    |               |            |
| 270             | AA__A271K4R              |               |             |    |               |            |
| 330             | AA__A331K4R              |               |             |    |               |            |
| 390             | AA__A391K4R              |               |             |    |               |            |
| 470             | AA__A471K4R              |               |             |    |               |            |
| 560             | AA__A561K4R              |               |             |    |               |            |
| 680             | AA__A681K4R              |               |             |    |               |            |
| 820             | AA__A821K4R              |               |             |    |               |            |
| 1,000           | AA__A102K4R              |               |             |    |               |            |
| 1,200           | AA__A122K4R              |               |             |    |               |            |
| 1,500           | AA__A152K4R              |               |             |    |               |            |
| 1,800           | AA__A182K4R              |               |             |    |               |            |
| 2,200           | AA__A222K4R              |               |             |    |               |            |
| 2,700           | AA__A272K4R              |               |             |    |               |            |
| 3,300           | AA__A332K4R              |               |             |    |               |            |
| 3,900           | AA__A392K4R              |               |             |    |               |            |
| 4,700           | AA__A472K4R              |               |             |    |               |            |
| 5,600           | AA__A562K4R              |               |             |    |               |            |
| 6,800           | AA__A682K4R              |               |             |    |               |            |
| 8,200           | AA__A822K4R              |               |             |    |               |            |
| 10,000          | AA__A103K4R              |               |             |    |               |            |

For other voltage and tolerances contact factory.

\*Other capacitance values available upon special request.

# Axial Leads/SpinGuard®/AA Series



Automotive — X7R Dielectric

## SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)



| AVX Style       |                          | AA10             |    | AA30             |    |
|-----------------|--------------------------|------------------|----|------------------|----|
| Length (L)      |                          | 4.32<br>(.170")  |    | 7.37<br>(.290")  |    |
| Diameter (D)    |                          | 2.54<br>(.100")  |    | 3.81<br>(.150")  |    |
| Lead Diameter   |                          | .445<br>(.0175") |    | .445<br>(.0175") |    |
| Lead Length     |                          | 25.4<br>(1.00")  |    | 25.4<br>(1.00")  |    |
| Cap. in *<br>pF | Typical AVX<br>Part Nos. | WVDC             |    | WVDC             |    |
|                 |                          | 100              | 50 | 100              | 50 |
| 220             | AA_C221KAR               |                  |    |                  |    |
| 270             | AA_C271KAR               |                  |    |                  |    |
| 330             | AA_C331KAR               |                  |    |                  |    |
| 390             | AA_C391KAR               |                  |    |                  |    |
| 470             | AA_C471KAR               |                  |    |                  |    |
| 560             | AA_C561KAR               |                  |    |                  |    |
| 680             | AA_C681KAR               |                  |    |                  |    |
| 820             | AA_C821KAR               |                  |    |                  |    |
| 1,000           | AA_C102KAR               |                  |    |                  |    |
| 1,200           | AA_C122KAR               |                  |    |                  |    |
| 1,500           | AA_C152KAR               |                  |    |                  |    |
| 1,800           | AA_C182KAR               |                  |    |                  |    |
| 2,200           | AA_C222KAR               |                  |    |                  |    |
| 2,700           | AA_C272KAR               |                  |    |                  |    |
| 3,300           | AA_C332KAR               |                  |    |                  |    |
| 3,900           | AA_C392KAR               |                  |    |                  |    |
| 4,700           | AA_C472KAR               |                  |    |                  |    |
| 5,600           | AA_C562KAR               |                  |    |                  |    |
| 6,800           | AA_C682KAR               |                  |    |                  |    |
| 8,200           | AA_C822KAR               |                  |    |                  |    |
| 10,000          | AA_C103KAR               |                  |    |                  |    |
| 12,000          | AA_C123KAR               |                  |    |                  |    |
| 15,000          | AA_C153KAR               |                  |    |                  |    |
| 18,000          | AA_C183KAR               |                  |    |                  |    |
| 22,000          | AA_C223KAR               |                  |    |                  |    |
| 27,000          | AA_C273KAR               |                  |    |                  |    |
| 33,000          | AA_C333KAR               |                  |    |                  |    |
| 39,000          | AA_C393KAR               |                  |    |                  |    |
| 47,000          | AA_C473KAR               |                  |    |                  |    |
| 56,000          | AA_C563KAR               |                  |    |                  |    |
| 68,000          | AA_C683KAR               |                  |    |                  |    |
| 82,000          | AA_C823KAR               |                  |    |                  |    |
| 100,000         | AA_C104KAR               |                  |    |                  |    |

For other voltage and tolerances contact factory.

\*Other capacitance values available upon special request.

## GENERAL DESCRIPTION

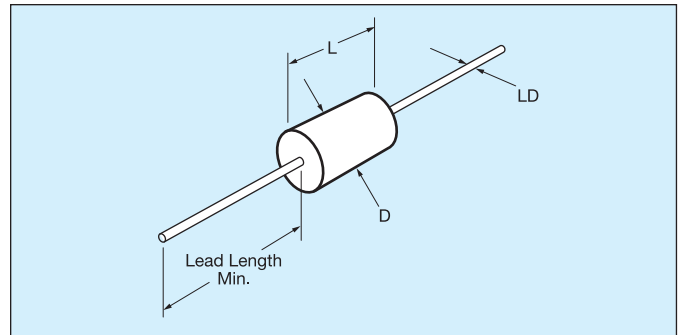
### AVX MA Series

#### Molded Axial Leaded MLC

**Temperature Coefficient:** COG (NP0), X7R, Z5U  
50V, 100V and 200V

**Case Material:** Molded Epoxy

**Lead Material:** Solderable



## HOW TO ORDER

**MA10**

### Molded Axial Size

MA10  
MA20  
MA30  
MA40  
MA50  
MA60

**5**

### Voltage

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

**E**

### Dielectric

A = COG (NP0)  
C = X7R  
E = Z5U

**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.)

**Z**

### Capacitance Tolerance

COG (NP0):

F = ±1%

J = ±5%

K = ±10%

M = ±20%

D = ±0.5pF  
<10pF only

X7R:

J = ±5%

K = ±10%

M = ±20%

Z5U:

M = ±20%

Z = +80%

-20%

**A**

### Failure Rate

A = Not Applicable

**A**

### Leads

A = Standard

**Not RoHS Compliant**

‡ C tolerance available COG (NP0) from 1.0 to 9.1 pF only. Minimum tolerance for values 10 pF - 100 pF is D or F whichever is greater.

## MARKING (EXAMPLE)

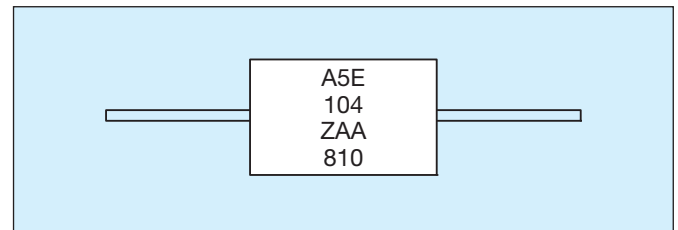
Line 1, A (for AVX), 5 = 50 Volts (V is optional),  
E = TC Line 2, 104Z = Capacitance Code

Line 3, Tolerance, 2 digit Lot Code

Date Code: 8 = 2008

10 = Week

Four Digit Date Code Optional



## MILITARY CROSS REFERENCE AND DIMENSIONS GUIDE

| Per MIL-Spec |             |               |            | Case Size                      |                               |                              |
|--------------|-------------|---------------|------------|--------------------------------|-------------------------------|------------------------------|
| AVX Style    | MIL-C-11015 | MIL-PRF-39014 | MIL-PRF-20 | Length (L)                     | Diameter (D)                  | Lead Diameter (LD)           |
| MA10         | CK12        | CKR11         | CCR75/CC75 | 4.07 ± .25<br>(.160" ± .010")  | 2.29 ± .25<br>(.090" ± .010") | .48 ± .05<br>(.019" ± .002") |
| MA20         | CK13        | CKR12         | CCR76/CC76 | 6.35 ± .25<br>(.250" ± .010")  | 2.29 ± .25<br>(.090" ± .010") | .48 ± .05<br>(.019" ± .002") |
| MA40         | CK14        | CKR14         | CCR77/CC77 | 9.91 ± .25<br>(.390" ± .010")  | 3.56 ± .25<br>(.140" ± .010") | .63 ± .05<br>(.025" ± .002") |
| MA50         | CK15        | CKR15         | CCR78/CC78 | 12.7 ± .51<br>(.500" ± .020")  | 6.35 ± .38<br>(.250" ± .015") | .63 ± .05<br>(.025" ± .002") |
| MA60         | CK16        | CKR16         | CCR79/CC79 | 17.53 ± .51<br>(.690" ± .020") | 8.89 ± .51<br>(.350" ± .015") | .63 ± .05<br>(.025" ± .002") |

For Military/Established Reliability Molded/Axial Lead see MIL-C-11015, MIL-PRF-39014, MIL-PRF-20 Section.

Dimensions: Millimeters (Inches)



### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)



| AVX Style          |                                                       | MA10                          |     |    | MA20                          |     |    | MA30                          |     |    | MA40                          |     |    | MA50                          |     |    | MA60                           |     |    |
|--------------------|-------------------------------------------------------|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|--------------------------------|-----|----|
| Length             |                                                       | 4.07 ± .25<br>(.160" ± .010") |     |    | 6.35 ± .25<br>(.250" ± .010") |     |    | 6.09 ± .25<br>(.240" ± .010") |     |    | 9.91 ± .25<br>(.390" ± .010") |     |    | 12.7 ± .51<br>(.500" ± .020") |     |    | 17.53 ± .51<br>(.690" ± .020") |     |    |
| Diameter           |                                                       | 2.29 ± .25<br>(.090" ± .010") |     |    | 2.29 ± .25<br>(.090" ± .010") |     |    | 3.30 ± .25<br>(.130" ± .010") |     |    | 3.56 ± .25<br>(.140" ± .010") |     |    | 6.35 ± .38<br>(.250" ± .015") |     |    | 8.89 ± .51<br>(.350" ± .015")  |     |    |
| Lead Diameter      |                                                       | .48 ± .05<br>(.019" ± .002")  |     |    | .48 ± .05<br>(.019" ± .002")  |     |    | .48 ± .05<br>(.019" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")   |     |    |
| Lead Length        |                                                       | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")                |     |    |
| Cap. in pF         | Typical AVX Part Nos.                                 | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                           |     |    |
|                    |                                                       | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                            | 100 | 50 |
| 1.0 to 9.1         | MA.....5A1R0DAA<br>MA.....5A9R1DAA                    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 10 to 15           | MA.....5A100KAA<br>MA.....5A120KAA<br>MA.....5A150KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 18 to 27           | MA.....5A180KAA<br>MA.....5A220KAA<br>MA.....5A270KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 33 to 47           | MA.....5A330KAA<br>MA.....5A390KAA<br>MA.....5A470KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 56 to 82           | MA.....5A560KAA<br>MA.....5A680KAA<br>MA.....5A820KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 100 to 150         | MA.....5A101KAA<br>MA.....5A121KAA<br>MA.....5A151KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 180 to 270         | MA.....5A181KAA<br>MA.....5A221KAA<br>MA.....5A271KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 330 to 470         | MA.....5A331KAA<br>MA.....5A391KAA<br>MA.....5A471KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 560 to 820         | MA.....5A561KAA<br>MA.....5A681KAA<br>MA.....5A821KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1000 to 1500       | MA.....5A102KAA<br>MA.....5A122KAA<br>MA.....5A152KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1800 to 2700       | MA.....5A182KAA<br>MA.....5A222KAA<br>MA.....5A272KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3300 to 4700       | MA.....5A332KAA<br>MA.....5A392KAA<br>MA.....5A472KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 5600 to 8200       | MA.....5A562KAA<br>MA.....5A682KAA<br>MA.....5A822KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 10,000 to 15,000   | MA.....5A103KAA<br>MA.....5A123KAA<br>MA.....5A153KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 18,000 to 27,000   | MA.....5A183KAA<br>MA.....5A223KAA<br>MA.....5A273KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 33,000 to 47,000   | MA.....5A333KAA<br>MA.....5A393KAA<br>MA.....5A473KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 56,000 to 82,000   | MA.....5A563KAA<br>MA.....5A683KAA<br>MA.....5A823KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 100,000 to 150,000 | MA.....5A104KAA<br>MA.....5A124KAA<br>MA.....5A154KAA |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |

For other tolerances see Part No. Codes  
For other voltages see Part No. Codes.  
AVX Style

### SIZE AND CAPACITANCE SPECIFICATIONS



Dimensions: Millimeters (Inches)

| AVX Style     |                       | MA10                          |     |    | MA20                          |     |    | MA30                          |     |    | MA40                          |     |    | MA50                          |     |    | MA60                           |     |    |
|---------------|-----------------------|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|--------------------------------|-----|----|
| Length        |                       | 4.07 ± .25<br>(.160" ± .010") |     |    | 6.35 ± .25<br>(.250" ± .010") |     |    | 6.09 ± .25<br>(.240" ± .010") |     |    | 9.91 ± .25<br>(.390" ± .010") |     |    | 12.7 ± .51<br>(.500" ± .020") |     |    | 17.53 ± .51<br>(.690" ± .020") |     |    |
| Diameter      |                       | 2.29 ± .25<br>(.090" ± .010") |     |    | 2.29 ± .25<br>(.090" ± .010") |     |    | 3.30 ± .25<br>(.130" ± .010") |     |    | 3.56 ± .25<br>(.140" ± .010") |     |    | 6.35 ± .38<br>(.250" ± .015") |     |    | 8.89 ± .51<br>(.350" ± .015")  |     |    |
| Lead Diameter |                       | .48 ± .05<br>(.019" ± .002")  |     |    | .48 ± .05<br>(.019" ± .002")  |     |    | .48 ± .05<br>(.019" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")   |     |    |
| Lead Length   |                       | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")                |     |    |
| Cap. in pF    | Typical AVX Part Nos. | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                           |     |    |
|               |                       | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                            | 100 | 50 |
| 220           | MA_____5C221KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 270           | MA_____5C271KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 330           | MA_____5C331KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 390           | MA_____5C391KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 470           | MA_____5C471KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 560           | MA_____5C561KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 680           | MA_____5C681KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 820           | MA_____5C821KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1000          | MA_____5C102KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1200          | MA_____5C122KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1500          | MA_____5C152KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1800          | MA_____5C182KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2200          | MA_____5C222KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2700          | MA_____5C272KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3300          | MA_____5C332KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3900          | MA_____5C392KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 4700          | MA_____5C472KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 5600          | MA_____5C562KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 6800          | MA_____5C682KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 8200          | MA_____5C822KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 10,000        | MA_____5C103KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 12,000        | MA_____5C123KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 15,000        | MA_____5C153KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 18,000        | MA_____5C183KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 22,000        | MA_____5C223KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 27,000        | MA_____5C273KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 33,000        | MA_____5C333KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 39,000        | MA_____5C393KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 47,000        | MA_____5C473KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 56,000        | MA_____5C563KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 68,000        | MA_____5C683KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 82,000        | MA_____5C823KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 100,000       | MA_____5C104KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 120,000       | MA_____5C124KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 150,000       | MA_____5C154KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 180,000       | MA_____5C184KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 220,000       | MA_____5C224KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 270,000       | MA_____5C274KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 330,000       | MA_____5C334KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 390,000       | MA_____5C394KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 470,000       | MA_____5C474KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 560,000       | MA_____5C564KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 680,000       | MA_____5C684KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 820,000       | MA_____5C824KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.0 µF        | MA_____5C105KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.2 µF        | MA_____5C125KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.5 µF        | MA_____5C155KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.8 µF        | MA_____5C185KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2.2 µF        | MA_____5C225KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2.7 µF        | MA_____5C275KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3.3 µF        | MA_____5C335KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3.9 µF        | MA_____5C395KAA       |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |

For other tolerances see Part No. Codes  
For other voltages see Part No. Codes.  
AVX Style

### SIZE AND CAPACITANCE SPECIFICATIONS

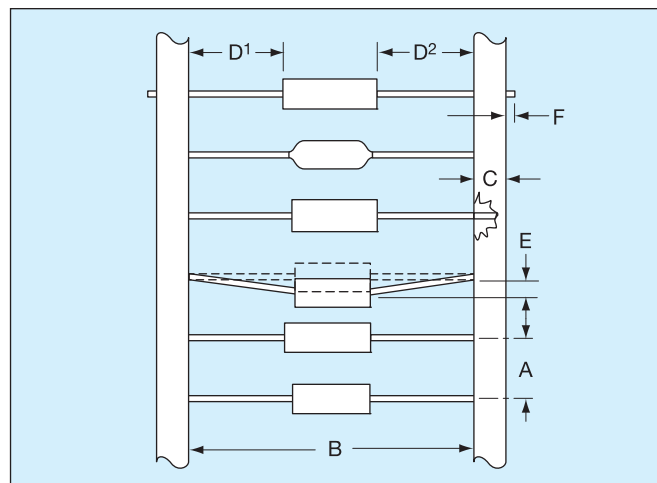
Dimensions: Millimeters (Inches)

| AVX Style     |                       | MA10                          |     |    | MA20                          |     |    | MA30                          |     |    | MA40                          |     |    | MA50                          |     |    | MA60                           |     |    |
|---------------|-----------------------|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|-------------------------------|-----|----|--------------------------------|-----|----|
| Length        |                       | 4.07 ± .25<br>(.160" ± .010") |     |    | 6.35 ± .25<br>(.250" ± .010") |     |    | 6.09 ± .25<br>(.240" ± .010") |     |    | 9.91 ± .25<br>(.390" ± .010") |     |    | 12.7 ± .51<br>(.500" ± .020") |     |    | 17.53 ± .51<br>(.690" ± .020") |     |    |
| Diameter      |                       | 2.29 ± .25<br>(.090" ± .010") |     |    | 2.29 ± .25<br>(.090" ± .010") |     |    | 3.30 ± .25<br>(.130" ± .010") |     |    | 3.56 ± .25<br>(.140" ± .010") |     |    | 6.35 ± .38<br>(.250" ± .015") |     |    | 8.89 ± .51<br>(.350" ± .015")  |     |    |
| Lead Diameter |                       | .48 ± .05<br>(.019" ± .002")  |     |    | .48 ± .05<br>(.019" ± .002")  |     |    | .48 ± .05<br>(.019" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")  |     |    | .63 ± .05<br>(.025" ± .002")   |     |    |
| Lead Length   |                       | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")               |     |    | 25.4<br>(1.00")                |     |    |
| Cap. in pF    | Typical AVX Part Nos. | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                          |     |    | WVDC                           |     |    |
|               |                       | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                           | 100 | 50 | 200                            | 100 | 50 |
| 1000          | MA___5E102ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1200          | MA___5E122ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1500          | MA___5E152ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1800          | MA___5E182ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2200          | MA___5E222ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2700          | MA___5E272ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3300          | MA___5E332ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3900          | MA___5E392ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 4700          | MA___5E472ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 5600          | MA___5E562ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 6800          | MA___5E682ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 8200          | MA___5E822ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 10,000        | MA___5E103ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 12,000        | MA___5E123ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 15,000        | MA___5E153ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 18,000        | MA___5E183ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 22,000        | MA___5E223ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 27,000        | MA___5E273ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 33,000        | MA___5E333ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 39,000        | MA___5E393ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 47,000        | MA___5E473ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 56,000        | MA___5E563ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 68,000        | MA___5E683ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 82,000        | MA___5E823ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 100,000       | MA___5E104ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 120,000       | MA___5E124ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 150,000       | MA___5E154ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 180,000       | MA___5E184ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 220,000       | MA___5E224ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 270,000       | MA___5E274ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 330,000       | MA___5E334ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 390,000       | MA___5E394ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 470,000       | MA___5E474ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 560,000       | MA___5E564ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 680,000       | MA___5E684ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 820,000       | MA___5E824ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.0 µF        | MA___5E105ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.2 µF        | MA___5E125ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.5 µF        | MA___5E155ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 1.8 µF        | MA___5E185ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2.2 µF        | MA___5E225ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 2.7 µF        | MA___5E275ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3.3 µF        | MA___5E335ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 3.9 µF        | MA___5E395ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 4.7 µF        | MA___5E475ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 5.6 µF        | MA___5E565ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 6.8 µF        | MA___5E685ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |
| 8.2 µF        | MA___5E825ZAA         |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                               |     |    |                                |     |    |

For other tolerances see Part No. Codes  
For other voltages see Part No. Codes.  
AVX Style

## TAPE AND REEL

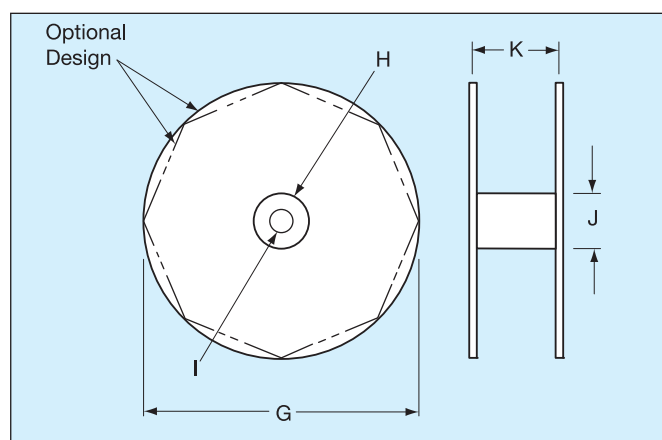
| CLASS I / RS-296                 |                                     |
|----------------------------------|-------------------------------------|
| A.                               | 5mm ± 0.5mm<br>(.200" ± 0.020")     |
| B*.                              | 52.4mm ± 1.5mm<br>(2.063" ± 0.059") |
| C.                               | 6.35mm ± 0.4mm<br>(0.250" ± 0.016") |
| D <sup>1</sup> -D <sup>2</sup> . | 1.4mm<br>(0.055" MAX.)              |
| E.                               | 1.2mm<br>(0.047" MAX.)              |
| F.                               | 1.6mm<br>(0.063" MAX.)              |
| G.                               | 356mm<br>(14.00")                   |
| H.                               | 76mm<br>(3.000")                    |
| I.                               | 25.4mm<br>(1.000")                  |
| J.                               | 84mm<br>(3.300")                    |
| K.                               | 70mm<br>(2.750")                    |



**Leader Tape:** 300mm min. (12")

**Splicing:** Tape Only

**Missing Parts:** 0.25% of component count max.-  
No consecutive missing parts



## REEL QUANTITIES (MAX.) ‡

|      |            |      |            |
|------|------------|------|------------|
| SA05 | 7,500 pcs. | MA10 | 5,000 pcs. |
| SA10 | 7,500 pcs. | MA20 | 5,000 pcs. |
| SA11 | 5,000 pcs. | MA30 | 3,000 pcs. |
| SA20 | 5,000 pcs. | MA40 | 3,000 pcs. |
| SA30 | 5,000 pcs. | MA50 | 950 pcs.   |
| SA40 | 5,000 pcs. | MA60 | 650 pcs.   |

‡ 1000 pc. reels available for distribution pack only in ±1% and ±2% tolerance.

\* Standard Tape Spacing Shown. Also available in 26.0mm + 1.5mm, - 0mm, (1.023 in. + .059 in. - 0 in. ) for SpinGuards only. EIA Class I, II and III tape spacings are available for molded axials. Tape spacing for Class II is 63.5mm ± 1.5mm (2.50 in ± .059 in), and for Class III 73mm ± 1.5mm (2.87 in ± .059 in)

## ADDITIONAL PACKAGING AVAILABLE

### AMMO PACK

| Tape Spacing                                  | SA05, SA10<br>SA20 | SA11<br>SA30 | SA40        | BOX SIZES (Nominal) |                  |                   |
|-----------------------------------------------|--------------------|--------------|-------------|---------------------|------------------|-------------------|
|                                               |                    |              |             | L                   | W                | H                 |
| 52.4mm ± 1.5mm<br>(2.062" ± .059")            | 4,000 pcs.         | 2000         | 2,000 pcs.  | 255mm<br>(10.039")  | 73mm<br>(2.874") | 93mm<br>(3.661")  |
| 26.0mm + 1.5mm - 0mm<br>(1.023" + .059" - 0") | 4,000 pcs.*        | 2000         | 2,000 pcs.* | 255mm<br>(10.039")  | 48mm<br>(1.889") | 113mm<br>(4.448") |

\*SpinGuard only

## BULK PACK (MOLDED AXIALS ONLY)

|                              |                |
|------------------------------|----------------|
| MA10<br>MA20<br>MA30<br>MA40 | 100 pcs. (bag) |
| MA50<br>MA60                 | 50 pcs. (bag)  |