



**THE DATASHEET OF  
SA101A221KAN**



# AXIAL LEADS

## SpinGuard®/SA Series

### GENERAL INFORMATION

#### SA Series

#### Conformally Coated Axial Leaded MLC

**Temperature Coefficients:** COG (NP0), X7R, X5R, Z5U  
10, 50, 100, 200 Volts

**Case Material:** Epoxy (Flame Retardant to UL Bulletin 492, Par. 280)

**Lead Material:** Solderable



### HOW TO ORDER

|  |  |  |  |  |   |   |
|--|--|--|--|--|---|---|
| <b>SA10</b>                                  | <b>5</b>                                   | <b>E</b>                                       | <b>104</b>   | <b>Z</b>   | <b>A</b>  | <b>R</b>  |
| <b>Conformal Axial Size</b>                  | <b>Voltage</b>                             | <b>Dielectric</b>                              | <b>Capacitance</b>   | <b>Capacitance Tolerance</b>   | <b>Failure Rate</b>   | <b>Leads</b>  |
| SA05<br>SA10<br>SA11<br>SA20<br>SA30<br>SA40 | Z = 10V<br>5 = 50V<br>1 = 100V<br>2 = 200V | A = COG (NP0)<br>C = X7R<br>D = X5R<br>E = Z5U | First two digits are the significant figures of capacitance. Third digit indicates the additional number of zeros. For example, order 100,000 pF as 104. (For values below 10pF use "R" in place of decimal point, e.g., 1R4 = 1.4pF.) | COG (NP0):<br>C = ±.25pF<br>D = ±.5pF<br>F = ±1%<br>G = ±2%<br>J = ±5%<br>K = ±10% | X7R:<br>J = ±5%<br>K = ±10%<br>M = ±20%<br><br>X5R:<br>K = ±10%<br>M = ±20%<br><br>Z5U:<br>M = ±20%<br>Z = +80%<br>-20% | A = Not Applicable<br><br>Standard (Solderable)<br>R = RoHS Compliant<br>A = Standard Solderable<br>(Also RoHS Compliant) |

**RoHS COMPLIANT**

*Please select correct termination style.*

### 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

- A = Standard Reels (see Page 49)
- B = 1000 piece reels (distributors only, tight tolerance only)
- C = Ammo Pack (see Page 49)
- D thru J = See Special Lead Configurations (Page 41)
- M = 26mm tape and reel
- N = 26mm ammo pack
- R = RoHS, Standard reels (See page 49)

# AXIAL LEADS

## SpinGuard® - SA Series - COG (NP0) Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

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

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

= Industry preferred values

\*\*C&D" Tolerance Only

# AXIAL LEADS/

## SpinGuard® - SA Series - X7R Dielectric

### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)



| 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") |      | .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")  |      | 25.4<br>(1.00")  |      |    |
| Cap. in. pF    | Typical 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        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| <b>10,000</b>  | <b>SA105C103KAR</b> |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 12,000         | SA105C123KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 15,000         | SA105C153KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 18,000         | SA105C183KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 22,000         | SA105C223KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 27,000         | SA105C273KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 33,000         | SA105C333KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 39,000         | SA105C393KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| <b>47,000</b>  | <b>SA105C473KAR</b> |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 56,000         | SA115C563KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 68,000         | SA115C683KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 82,000         | SA115C823KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| <b>100,000</b> | <b>SA115C104KAR</b> |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 120,000        | SA305C124KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 150,000        | SA305C154KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 180,000        | SA305C184KAR        |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| <b>220,000</b> | <b>SA305C224KAR</b> |                  |     |    |                  |     |                  |      |                  |      |                  |      |                  |      |    |
| 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  
 Style

= Industry preferred values

# AXIAL LEADS/SPINGUARD®

## SpinGuard® - SA Series - Z5U Dielectric



### SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: Millimeters (Inches)

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

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

= Industry preferred values

\*Preferred Industry Decoupling Capacitor — Insertable on .300" centers.  
**SA105E104ZAA**

## Looking for pricing, stock, or lifecycle information?

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