



Features

- Formerly a JENSEN DEVICES product
- High insulation resistance
- Quick response, long service life
- Available DC breakdown range: 2.4 kV to 7.2 kV
- Wide operating temperature range
- RoHS compliant*

Applications

- Street lighting
- Medical devices (low/medium risk)**
- Air conditioning
- Power supplies
- Projectors
- Welders

SA2 Series High Voltage Gas Discharge Tube

Description

Bourns® SA2 Series two-electrode High Voltage Gas Discharge Tube devices are designed for high isolation applications. The series offers high insulation resistance over a wide temperature range and is offered with DC breakdowns from 2.4 kV to 7.2 kV. Other customized voltages between 2 kV and 7.2 kV are available upon request.

Agency Recognition

| Agency | Category | Agency File No. |
|--------|----------|-----------------|
| UL | UL 1449 | E313168 |

Additional Information

Click these links for more information:



Electrical Characteristics

| Part No. | Device Specifications | | | | | | | | | Life Ratings | | |
|------------------|---------------------------------------|------|------|----------------|----------------------|---------------|---------------------------------------|--------------------------------|------------------------|------------------------------|--|--|
| | DC Breakdown Voltage @ 500 V/s (1) | | | | Impulse Breakdown | Ramp | Insulation Resistance @ 250 Vdc | Arc Voltage @ 5A min. | Capacitance @ 1 MHz | Nominal Impulse Discharge | | Nom. DC Break- down After Life |
| | Min. | Typ. | Max. | Tol. | Max. | Typ. | Min. | Typ. | Max. | 1 Operation | 10 Operations | |
| SA2-2400-Dxx-STD | 2040 | 2400 | 2880 | -15 % to +20 % | 3800 V | @1 kV/μs | 10 G Ohm | 20 V | 1 pF | 10 kA, 8/20 μs | 5 kA, 8/20 μs, ±5 operations in each polarity | >2.0 kV |
| SA2-2400-Cxx-STD | 1920 | 2400 | 2880 | -20 % to +20 % | | >1.9 kV | | | | | | |
| SA2-3000-Dxx-STD | 2550 | 3000 | 3600 | -15 % to +20 % | 4500 V | @7.5 kV/μs | | | | | | >2.4 kV |
| SA2-3000-Cxx-STD | 2400 | 3000 | 3600 | -20 % to +20 % | | >2.3 kV | | | | | | |
| SA2-3600-Dxx-STD | 3060 | 3600 | 4320 | -15 % to +20 % | 5400 V | @7.5 kV/μs | | | | | | >3.0 kV |
| SA2-3600-Cxx-STD | 2880 | 3600 | 4320 | -20 % to +20 % | | >2.8 kV | | | | | | |
| SA2-4000-Dxx-STD | 3400 | 4000 | 4800 | -15 % to +20 % | 6000 V | @7.5 kV/μs | | | | | | >3.3 kV |
| SA2-4000-Cxx-STD | 3200 | 4000 | 4800 | -20 % to +20 % | | >3.1 kV | | | | | | |
| SA2-4500-Dxx-STD | 3825 | 4500 | 5400 | -15 % to +20 % | 6500 V | @7.5 kV/μs | | | | | | >4.0 kV |
| SA2-4500-Cxx-STD | 3600 | 4500 | 5400 | -20 % to +20 % | | >3.8 kV | | | | | | |
| SA2-5500-Dxx-STD | 4675 | 5500 | 6600 | -15 % to +20 % | 8000 V | @7.5 kV/μs | | | | | | >4.4 kV |
| SA2-5500-Cxx-STD | 4400 | 5500 | 6600 | -20 % to +20 % | | >4.2 kV | | | | | | |
| SA2-5900-Dxx-STD | 5015 | 5900 | 7080 | -15 % to +20 % | 8000 V | @7.5 kV/μs | | | | | | >4.9 kV |
| SA2-5900-Cxx-STD | 4720 | 5900 | 7080 | -20 % to +20 % | | >4.6 kV | | | | | | |
| SA2-6000-Dxx-STD | 5100 | 6000 | 7200 | -15 % to +20 % | 8000 V | @7.5 kV/μs | | | | | | >5.0 kV |
| SA2-6000-Cxx-STD | 4800 | 6000 | 7200 | -20 % to +20 % | | >4.7 kV | | | | | | |
| SA2-6200-Dxx-STD | 5270 | 6200 | 7440 | -15 % to +20 % | 8000 V | @7.5 kV/μs | | | | | | >5.2 kV |
| SA2-6200-Cxx-STD | 4960 | 6200 | 7440 | -20 % to +20 % | | >4.9 kV | | | | | | |
| SA2-6300-Dxx-STD | 5355 | 6300 | 7560 | -15 % to +20 % | 9200 V | @7.5 kV/μs | | | | | | >5.3 kV |
| SA2-6300-Cxx-STD | 5040 | 6300 | 7560 | -20 % to +20 % | | >5.0 kV | | | | | | |
| SA2-7200-Dxx-STD | 6120 | 7200 | 8640 | -15 % to +20 % | 10000 V | @1 kV/μs | | | | | | >6.3 kV |
| SA2-7200-Cxx-STD | 5760 | 7200 | 8640 | -20 % to +20 % | | >6.0 kV | | | | | | |

Notes: Model SA2-7200 specification is based on the customer providing sufficient encapsulation/working environment for the component to avoid outside surface breakdown (e.g., non-contaminated equivalent surface in RH 40 % reaches breakdown at 10-12 kV).

(1) DC and Impulse Sparkover values are in ionized mode @ 25 °C.

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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Users should verify actual device performance in their specific applications.

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SA2 Series High Voltage Gas Discharge Tube

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Product Characteristics

| | |
|-----------------------------------|-------------------|
| Operating Temperature Range | -40 °C to +125 °C |
| Storage Temperature Range | -65 °C to +125 °C |
| Device Plating..... | Matte-Sn |
| Moisture Sensitivity Level | 1 |
| ESD Classification (HBM)..... | 6 |

Environmental Characteristics

| Section | Category | Test | Condition |
|-------------------------|-----------------|------------------------------|--|
| IEC 60068-2-13 test M | Operational | Low Air Pressure | Temp. +55 °C, Time 0.5 Sec., Pressure 600 hPa |
| IEC 60068-2-1, test Ab | Non-Operational | Cold | -40 °C, 96 Hours |
| IEC 60068-2-2, test Bb | | Dry Heat | +100 °C, 96 Hours |
| IEC 60068-2-30, test Ca | | Damp Heat, Steady State | +40 °C, 93 % RH, 21 Days |
| IEC 60068-2-14, test Na | | Rapid Change in Temperature | Upper Temp. +100 °C, Lower Temp. -40 °C, 5 Cycles |
| IEC 60068-2-6, test Fc | | Vibration | 10-55 Hz, 30 Min. per Axis, Double Amplitude 0.70 Min. |
| IEC 60068-2-27, test Ea | | Shock Test | 30 g, 11 ms, Half Sine Pulse |
| IEC 60068-2-20, test Ta | | Solderability | Method 1, +235 °C, 2 Sec., Aging |
| IEC 60068-2-20, test Tb | | Resistance to Soldering Heat | Method 1A, +260 °C, 5 Sec. |
| IEC 60068-2-21 | | Robustness of Terminations | Ua1 (Tensile), Ua2 (Thrust), Ub (Bending) and Uc (Torsion) |

How to Order

SA 2 - nnnn - x x x - STD

Series Designator _____

No. of Electrodes _____
2 = 2 Electrodes

Breakdown Voltage _____
 2400 = 2400 V 4500 = 4500 V 6200 = 6200 V
 3000 = 3000 V 5500 = 5500 V 6300 = 6300 V
 3600 = 3600 V 5900 = 5900 V 7200 = 7200 V
 4000 = 4000 V 6000 = 6000 V

Tolerance _____
 C = -20 % to +20 %
 D = -15 % to +20 %

Lead Shape _____
 B = Bent Leads*
 C = No Leads*
 K = Bent Leads with Kinks*
 K1 = Bent Leads with Kinks*
 L = Straight Leads**

Packaging _____
 B = Bulk
 T = Tape & Reel

Standard or Modified Product Indicator _____
 STD = Standard

Typical Part Marking

.....  SA2-xxxx 

* Available in bulk packaging only.

** Bulk packaging available for straight lead devices ≤3600 V. Devices >3600 V available in tape and reel only.

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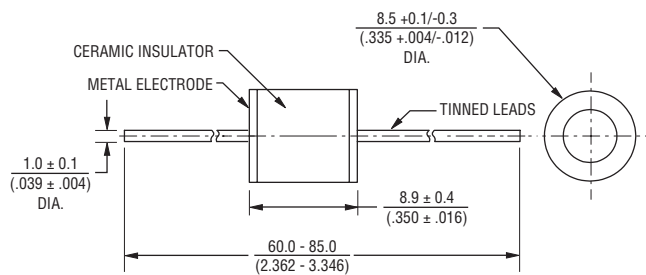
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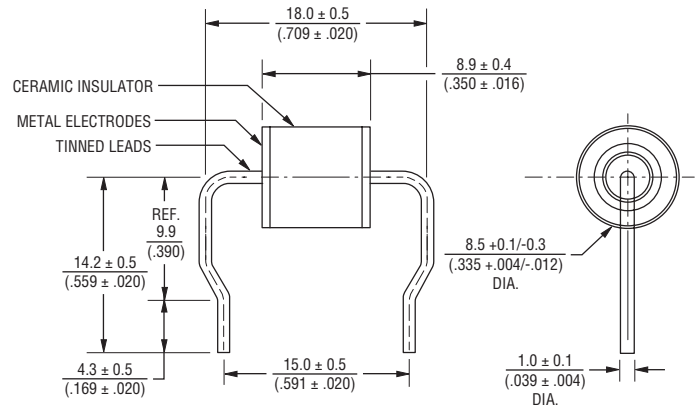
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Product Dimensions

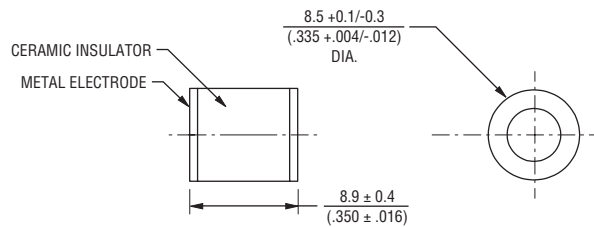
SA2-xxxx-xLx



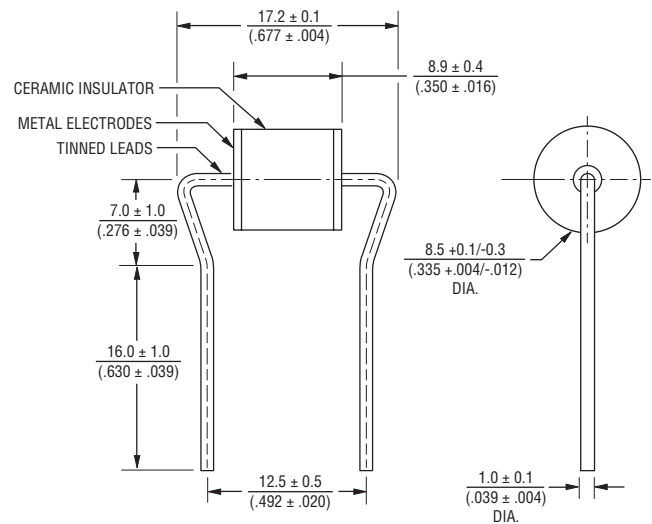
SA2-xxxx-xKx



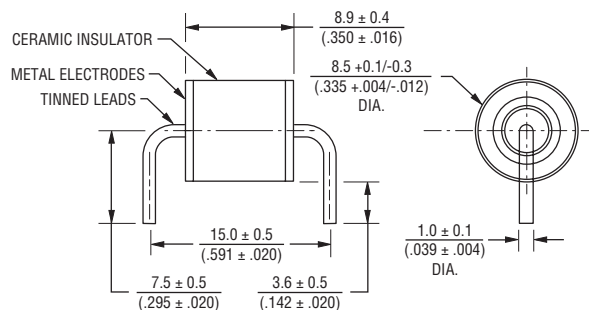
SA2-xxxx-xCx



SA2-xxxx-xK1x



SA2-xxxx-xBx



DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

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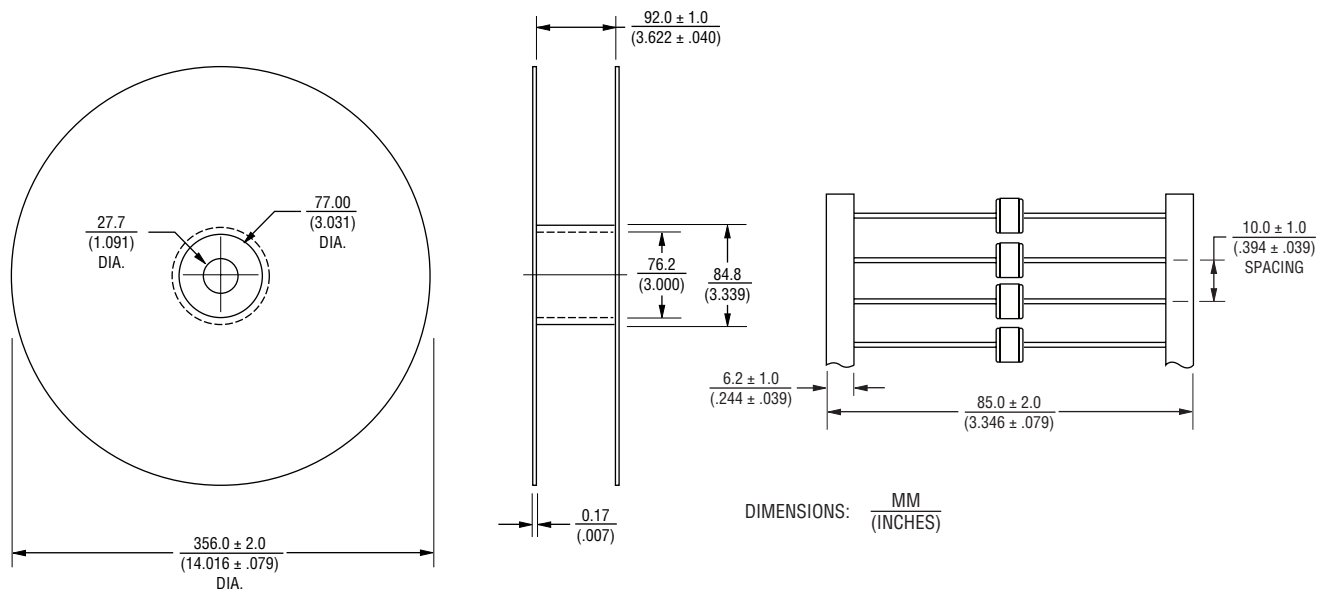
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Packaging Specifications

Model SA2-xxxx-xxB ships standard bulk pack, 1,000 pcs./bag*.
The optional tape and reel packaging contains 1,000 pcs./reel for Model SA2-xxxx-xLT.

* Straight leads versions >3600 V available in bulk or tape and reel packaging; all other models available in bulk packaging only.

SA2-xxxx-xLT



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