Bourns® Sparctube® Switching Spark Gap Series is a range of switching spark gaps designed specifically for voltage controlled switching of capacitive discharge circuits where a high energy, low loss, fast rate of switching is required. This series is ideally suited for applications where a capacitive discharge is utilized with a transformer to obtain pulses of very high voltage levels in the order of several thousand volts.

**Characteristics**

**Initial Values:**
- Static Breakdown Voltage @ 800 V/s: \(< 950 \text{ V}\)
- First Ignition Values: \(800 \text{ V} \pm 12\%\)
- Following Ignition Values: \(800 \text{ V} \pm 12\%\)

**Electrical Life:**
- Minimum Number of Switching Cycles: \(2 \times 10^5\)
- Peak Current (Approx.): \(450 \text{ A}\)
- Maximum Switching Frequency: \(500 \text{ Hz}\)

**Breakdown Characteristics @ 1000 V Limit**
- First Ignition Values: \(\leq 1000 \text{ V}\)
- Delay Time: \(< 60 \text{ ms}\)
- Following Ignition Values: \(800 \text{ V} \pm 15\%\)

**General Data:**
- Breakdown Time: \(< 50 \text{ ns}\)
- Insulation Resistance @ 100 Vdc: > 100 megohms
- Maximum Static Breakdown Voltage @ 100 V/ms: \(1300 \text{ V}\)
- Share of Early Ignition Values (< 680 V): \(< 1\%\)
- Residual Voltage @ 50 ns: \(< 300 \text{ V}\)
- Capacitance: \(< 1 \text{ pF}\)
- Operating Temperature Range: \(-40 ^\circ\text{C} \text{ to } +160 ^\circ\text{C}\)
- Storage Temperature Range: \(-65 ^\circ\text{C} \text{ to } +125 ^\circ\text{C}\)
- Weight (Approx.): 2.3 g
- Testing: 100%
- Robustness of Terminations: IEC 60068-2-21

**Notes:**
1. At delivery AQL 0.65 Level II, DIN ISO 2859.
2. Distribution of switchings: maximum 20% above +125 °C and 20% below +20°C.
3. Test Ua1 (tensile), Ua2 (thrust), Ub (bending) and Uc (torsion).

**Applications**
- Igniters for Xenon discharge lamps
- Electronic igniters for gas heating and gas domestic appliances, e.g., cookers
- Ignition of ultra-high pressure gas discharge lamps for data and video projectors

**Basic Application Circuit**

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*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.
### Product Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>8.0 ± 0.1/0.3 (0.315 ± 0.004/0.012) DIA.</td>
</tr>
<tr>
<td>Length</td>
<td>60.0 - 82.0 (2.362 - 3.228)</td>
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</table>

#### ST-0800-BLx

<table>
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<tr>
<th>Dimension</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>5.8 ± 0.3 (2.28 ± 0.012)</td>
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</tbody>
</table>

#### ST-0800-BCx

<table>
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<tr>
<th>Dimension</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Diameter</td>
<td>8.4 (0.331) MAX.</td>
</tr>
<tr>
<td>Diameter</td>
<td>8.6 (0.339) MAX.</td>
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</tbody>
</table>

#### ST-0800-BBx

<table>
<thead>
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<th>Dimension</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>0.20 (0.08) APPROX.</td>
</tr>
<tr>
<td>Diameter</td>
<td>9.6 (0.38)</td>
</tr>
</tbody>
</table>

### How to Order

**ST - 0800 - B x x - STD**

- **Series Designator**
- **Switching Voltage** 0800 = 800 V
- **Tolerance** B = 12%
- **Lead Shape** B = Bent Leads
- **C = No Leads**
- **L = Straight Leads**
- **Packaging** B = Bulk
- **T = Tape & Reel**

*Leadless version available in bulk packaging only.

**Typical Part Marking**

ST 0800 wwy ...... “wwy” = Week and year of production

### Recommended Pad Layout

#### Test Circuit

- **Uo** ...... 1000-1500 V
- **R** ...... See Note
- **C** ...... 100 nF
- **L** ...... 0.5 μH
- **DUT** ...... Device Under Test
- **Us** ...... Breakdown Voltages

**NOTE:** Uo and R are set to provide suitable conditions for different measurements.
Sparctube® Switching Spark Gap ST-0800 Series

Packaging Specifications

Models ST-0800-BBB, ST-0800-BLB and ST-0800-BCB* ship standard bulk pack, 1,000 pcs./bag. The optional tape and reel packaging contains 1,000 pcs./reel for Model ST-0800-BLT; 500 pcs./reel for Model ST-0800-BBT.

* Available in bulk packaging only.

ST-0800-BLT

ST-0800-BBT

DIMENSIONS: MM (INCHES)

REV. 05/19

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Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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