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:
  - First Ignition Values: ≤ 620 V
  - Following Ignition Values: 470 V ±12%

**Electrical Life:**
- Minimum Number of Switching Cycles: 2x10^5
- Peak Current (Approx.): 500 A
- Maximum Switching Frequency: 200 Hz

**Breakdown Characteristics @ 620 V Limit**
- First Ignition Values: ≤ 620 V
- Delay Time: < 60 ms
- Following Ignition Values: 470 V ±15%

**General Data:**
- Breakdown Time: < 50 ns
- Insulation Resistance @100 Vdc: > 100 megohms
- Share of Early Ignition Values (< 400 V): < 1%
- Capacitance: < 1 pF
- Operating Temperature Range: -40 °C to +160 °C
- Storage Temperature Range: -65 °C to +125 °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).

### Basic Application Circuit

![Basic Application Circuit Diagram]

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**Features**
- Formerly a \[\text{REDEVELOPED}\] product
- Fast switching rate
- High energy, low loss capability
- Wide operating temperature range
- Long service life
- High insulation resistance
- RoHS compliant*

**Applications**
- Ignitors 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
Sparctube® Switching Spark Gap ST-0470 Series

Product Dimensions

ST-0470-BLx
- CERAMIC INSULATOR
- METAL ELECTRODE
- TINNED LEADS
- 8.0 +0.1/-0.3 (.315 +.004/-.012) DIA.
- 60.0 - 82.0 (2.362 - 3.228) DIA.

ST-0470-BCx
- CERAMIC INSULATOR
- METAL ELECTRODE
- 8.0 +0.1/-0.3 (.315 +.004/-.012) DIA.

ST-0470-BBx
- 5.8 ± 0.3 (.228 ± .012) MAX.
- 6.9 ± 0.3 (.272 ± .012) MAX.
- 8.0 +0.1/-0.3 (.315 +.004/-.012) DIA.
- 0.20 (.008) APPROX.

How to Order

ST - 0470 - B x x - STD
- Series Designator
- Switching Voltage
  0470 = 470 V
- Tolerance
  B = 12 %
- Lead Shape
  B = Bent Leads
  C = No Leads*
  L = Straight Leads
- Packaging
  B = Bulk
  T = Tape & Reel*
- Standard or Modified Product Indicator
  STD = Standard
  Leadless version available in bulk packaging only.

Typical Part Marking
- ST 0470 wwy......“wwy” = Week and year of production

Recommended Pad Layout

DIMENSIONS: MM (INCHES)
- 9.6 (.38)
- 8.6 (.34)
- 4.5 (.18)

Test Circuit

Uo........620 V
R........See Note
C........470 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.

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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Sparctube® Switching Spark Gap ST-0470 Series

Packaging Specifications

Models ST-0470-BBB, ST-0470-BLB and ST-0470-BCB* ship standard bulk pack, 1,000 pcs./bag. The optional tape and reel packaging contains 1,000 pcs./reel for Model ST-0470-BLT; 500 pcs./reel for Model ST-0470-BBT.

* Available in bulk packaging only.

DIMENSIONS: MM (INCHES)

ST-0470-BLT

ST-0470-BBT

REV. 05/19

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Users should verify actual device performance in their specific applications.

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