Sparctube® Switching Spark Gap ST-0750 Series

**Description**

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 \(^1\) ............................................................................................................................................. < 900 V
  - First Ignition Values .................................................................................................................................
  - Following Ignition Values ............................................................................................................................. 750 V ±12 %

**Electrical Life:**
- Minimum Number of Switching Cycles ........................................................................................................ 2 x 10^5
- Peak Current (Approx.) ...................................................................................................................................... 450 A
- Maximum Switching Frequency .................................................................................................................... 200 Hz

**Breakdown Characteristics @ 950 V Limit**
- First Ignition Values ................................................................................................................................. ≤ 950 V
- Delay Time .................................................................................................................................................. < 60 ms
- Following Ignition Values ............................................................................................................................. 750 V ±15 %

**General Data:**
- Breakdown Time ........................................................................................................................................ < 50 ns
- Insulation Resistance @ 100 Vdc ................................................................................................................... > 100 megohms
- Maximum Static Breakdown Voltage @ 100 V/ms ....................................................................................... 1250 V
- Share of Early Ignition Values (< 638 V) ........................................................................................................ < 1 %
- Residual Voltage @ 50 ns ............................................................................................................................. < 300 V
- 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 ......................................................................................................................................................... IEC 60068-2-21 \(^3\)
- Robustness of Terminations ...................................................................................................................... IEC 60068-2-21 \(^3\)

**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

**Features**

- Formerly a JENNIEN DEVICES product
- Fast switching rate
- High energy, low loss capability
- Wide operating temperature range
- Long service life
- High insulation resistance
- RoHS compliant*

**Basic Application Circuit**

![Basic Application Circuit Diagram]

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Sparctube® Switching Spark Gap ST-0750 Series

Product Dimensions

ST-0750-BLx

METAL ELECTRODE
CERAMIC INSULATOR
TINNED LEADS

- 1.0 (0.039) DIA.
- 5.8 ± 0.3 (228 ± 0.012)
- 8.0 ± 0.1/0.3 (.315 ± 0.004/0.012) DIA.
- 60.0 - 82.0 (2.362 - 3.228)

ST-0750-BCx

METAL ELECTRODE
CERAMIC INSULATOR
TINNED LEADS

- 1.0 (0.039) DIA.
- 8.0 ± 0.1/0.3 (.315 ± 0.004/0.012)
- 5.8 ± 0.3 (228 ± 0.012)

ST-0750-BBx

METAL ELECTRODE
CERAMIC INSULATOR
TINNED LEADS

- 0.20 (0.008) APPROX.
- 8.4 (331) MAX.
- 1.00 (0.039) DIA.
- 5.8 ± 0.3 (228 ± 0.012)

- 0.20 ± 0.15/0.05 (.008 ± 0.006/0.002)
- 8.0 ± 0.1/0.2 (.315 ± 0.004/0.012) DIA.
- 2.52 ± 0.20 (.099 ± 0.008)

Dimensions: MM (INCHES)

How to Order

ST - 0750 - B x x - STD

- Series Designator: ST-0750
- Switching Voltage: 0750 = 750 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 0750 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.

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Packaging Specifications

Models ST-0750-BBB, ST-0750-CLB and ST-0750-BCB* ship standard bulk pack, 1,000 pcs./bag. The optional tape and reel packaging contains 1,000 pcs./reel for Model ST-0750-BLT; 500 pcs./reel for Model ST-0750-BBT.

* Available in bulk packaging only.

ST-0750-BLT

DIMENSIONS: MM (INCHES)

ST-0750-BBT

DIMENSIONS: MM (INCHES)

REV. 05/19

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