

Features

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

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

Sparcube® Switching Spark Gap ST-0470 Series

Description

Bourns® Sparcube® 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

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 %

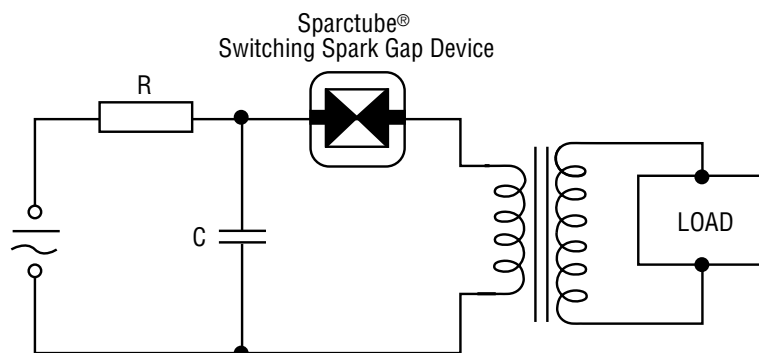
General Data:

Breakdown Time	< 50 ns
Insulation Resistance @ 100 Vdc	> 100 megohms
Share of Early Ignition Values (< 400 V)	< 1 %
Capacitance	< 1 pF
Operating Temperature Range ²	-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 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).

Basic Application Circuit



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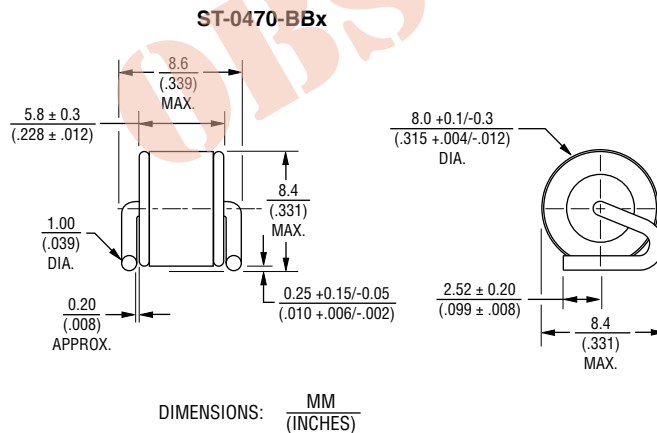
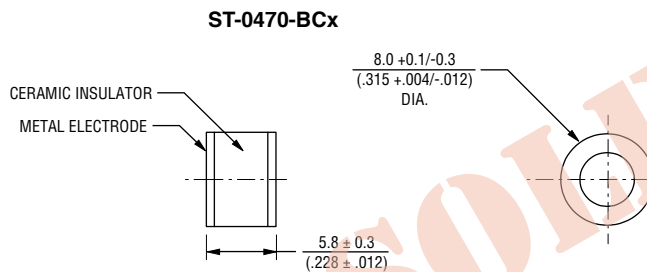
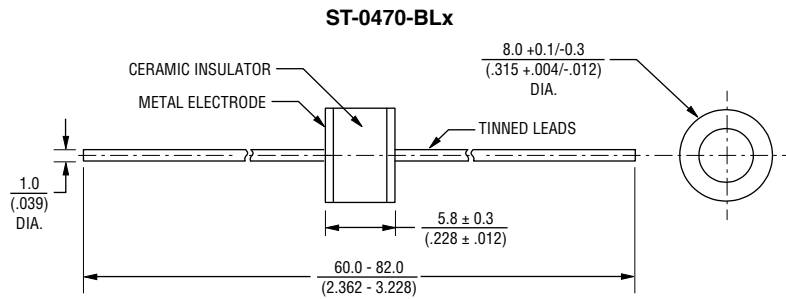
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*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described 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.

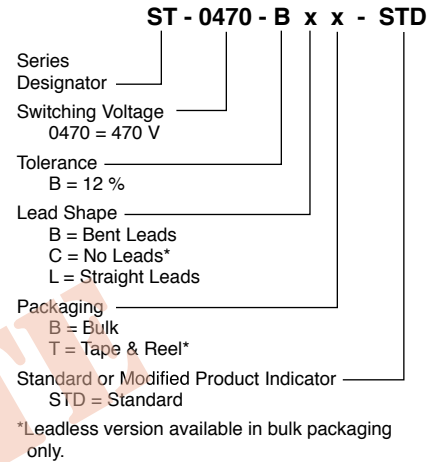
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Product Dimensions



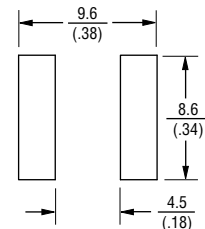
How to Order



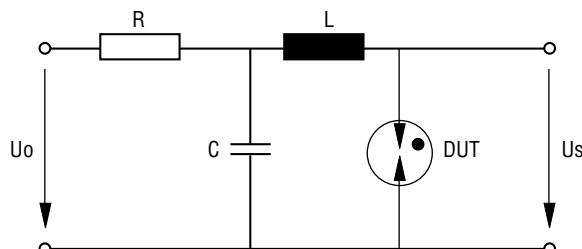
Typical Part Marking

B ST 0470 wwy "wwy" = Week and year of production

Recommended Pad Layout



Test Circuit



U_o 620 V
R See Note
C 470 nF
L 0.5 μH
DUT Device Under Test
U_s Breakdown Voltages

NOTE: U_o and R are set to provide suitable conditions for different measurements.

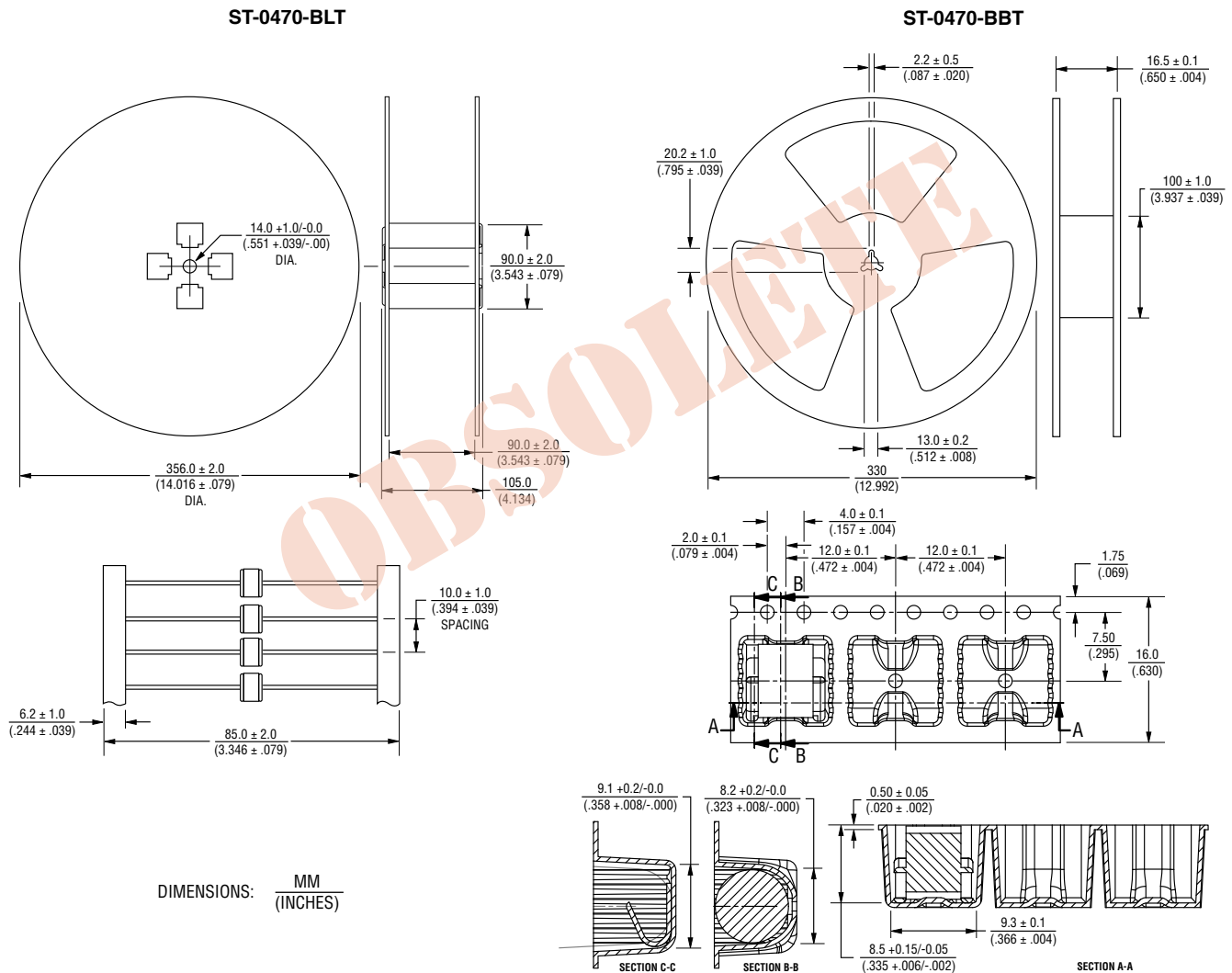
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Packaging Specifications

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.



REV. 05/19

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