


## Features

- Formerly a  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

## Sparctube® Switching Spark Gap ST-0470 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 <sup>1</sup>

First Ignition Values .....	< 620 V
Following Ignition Values .....	470 V ±12 %

#### Electrical Life:

Minimum Number of Switching Cycles .....	2x10 <sup>5</sup>
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 %

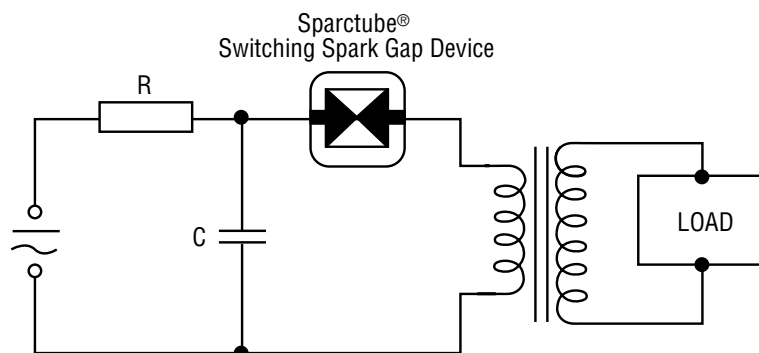
#### General Data:

Breakdown Time .....	< 50 ns
Insulation Resistance @ 100 Vdc .....	> 100 megohms
Share of Early Ignition Values (< 400 V) .....	< 1 %
Capacitance .....	< 1 pF
Operating Temperature Range <sup>2</sup> .....	-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 <sup>3</sup>

#### Notes:

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

### Basic Application Circuit



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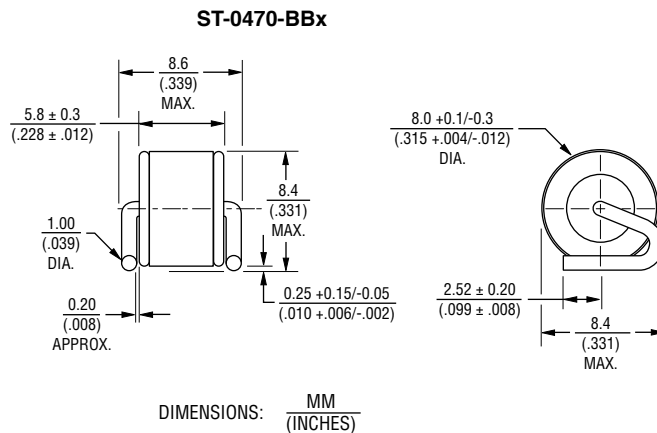
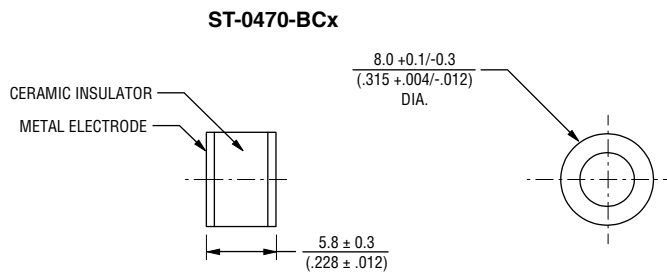
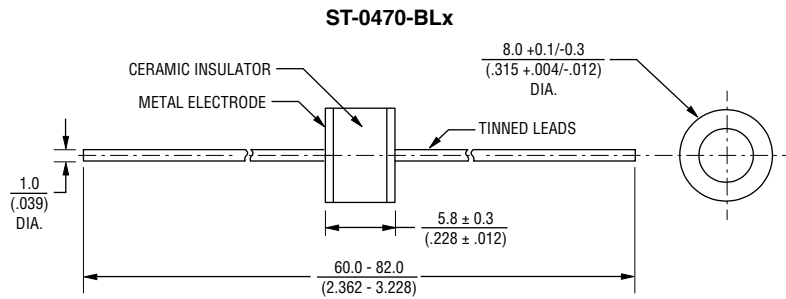
[www.bourns.com](http://www.bourns.com)

\*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](http://www.bourns.com/docs/legal/disclaimer.pdf).

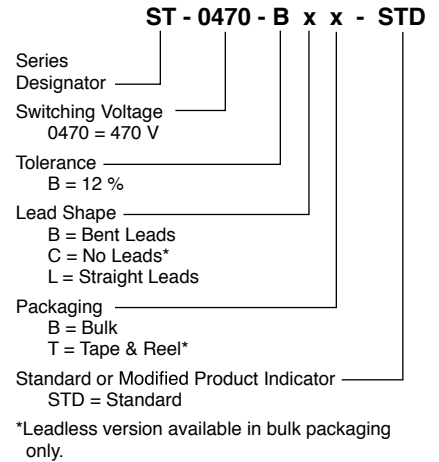
# Sparctube® Switching Spark Gap ST-0470 Series

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## Product Dimensions



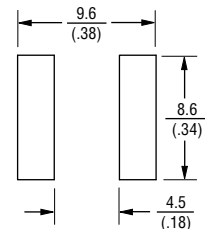
## How to Order



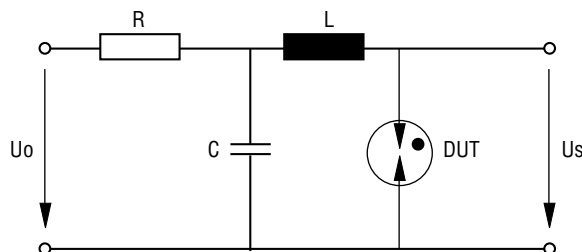
## Typical Part Marking

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

## Recommended Pad Layout



## Test Circuit



Uo ..... 620 V  
 R ..... See Note  
 C ..... 470 nF  
 L ..... 0.5  $\mu$ H  
 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-0470 Series

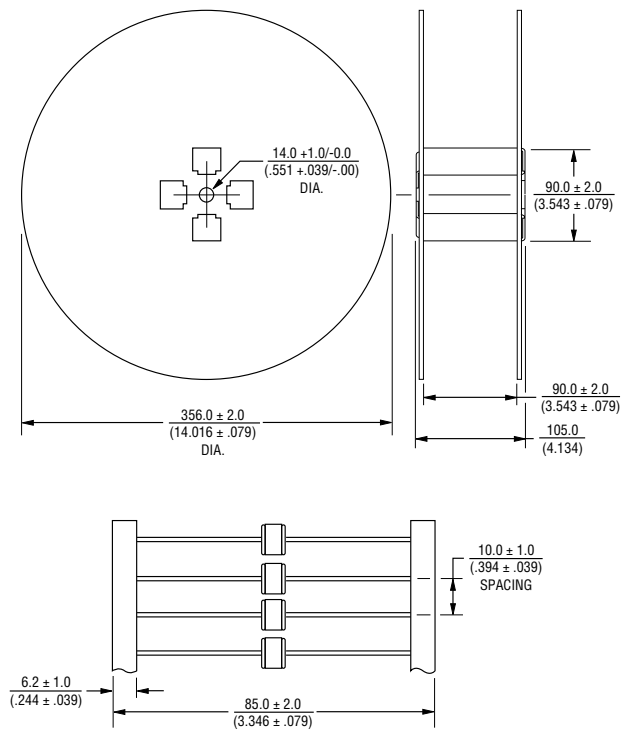
# BOURNS®

## Packaging Specifications

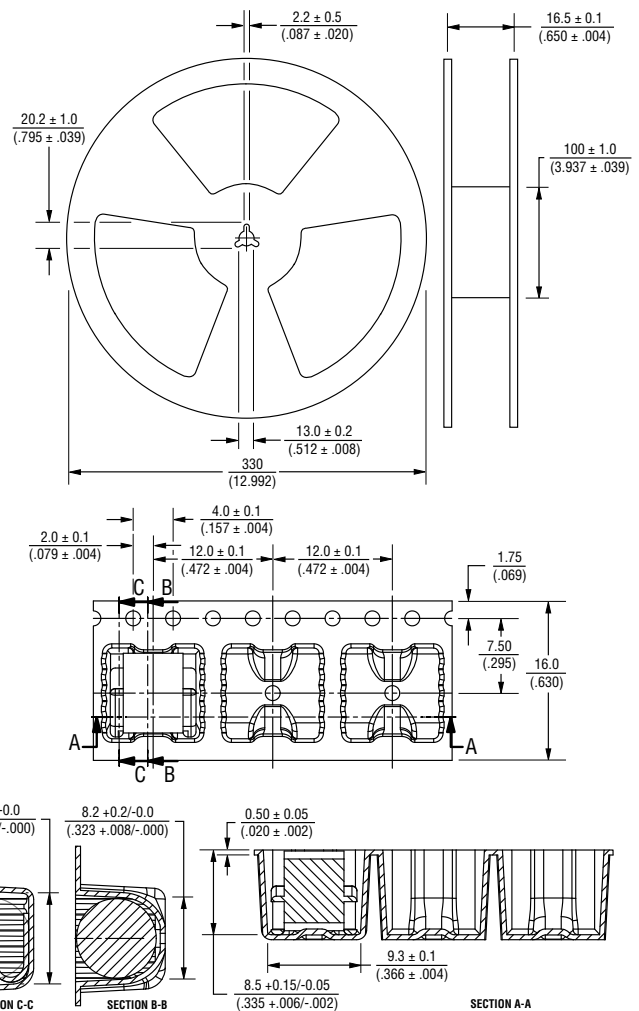
Models ST-0470-BBB, ST-0470-BLB and ST-0470-BCB\* ship standard bulk pack, 1,000 pcs./bag. The optional tape and reel packaging contains 1,000 pcs./reel for Model ST-0470-BLT; 500 pcs./reel for Model ST-0470-BBT.

\* Available in bulk packaging only.

**ST-0470-BLT**



**ST-0470-BBT**



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

REV. 11/18

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Users should verify actual device performance in their specific applications.

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