

## Features

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

## Applications

- Igniters for architectural and automotive 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

# ST-0470 Series Sparctube™ Switching Spark Gap

## Description

Bourns® Sparctube™ 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
<b>Breakdown Characteristics @ 620 V Limit</b>	
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>

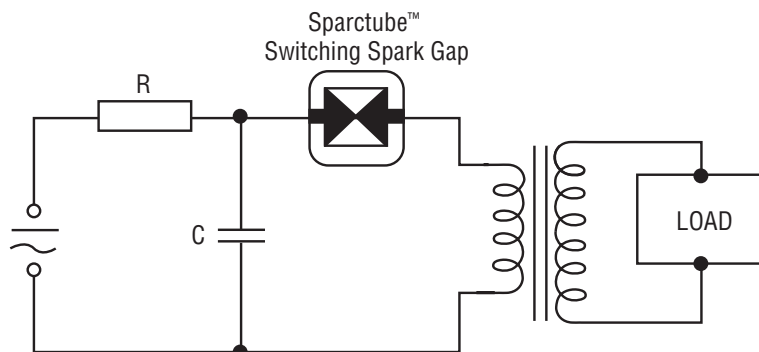
### Notes:

<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



# BOURNS®

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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.

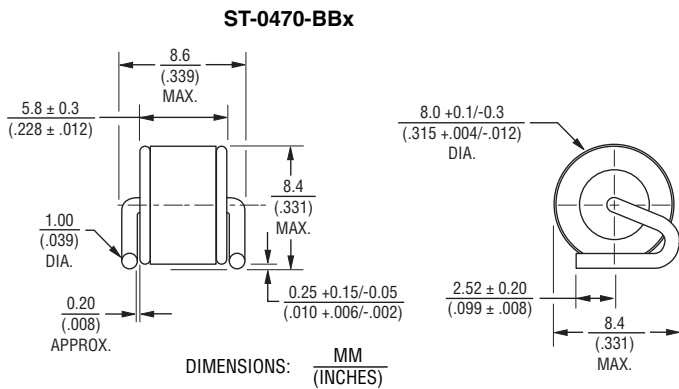
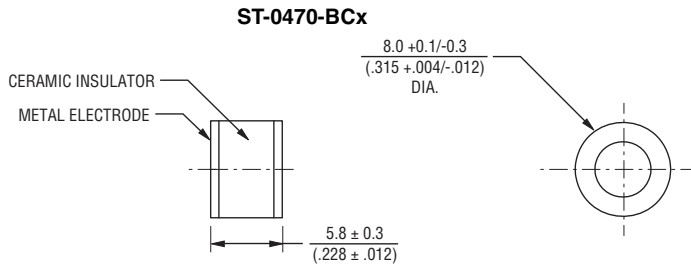
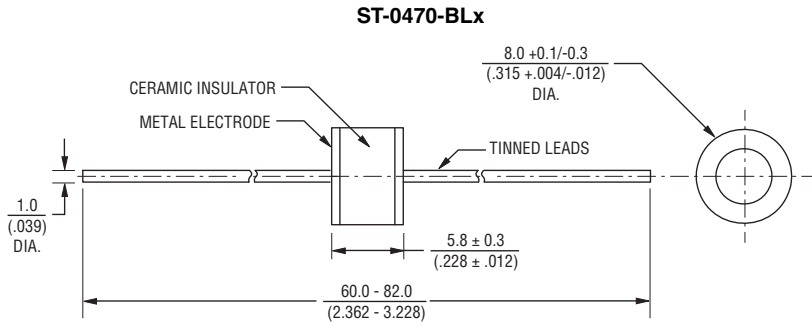
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

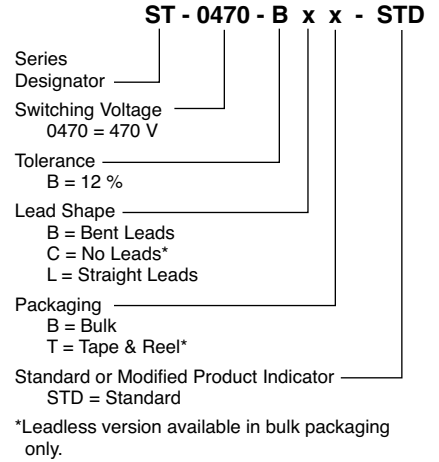
# ST-0470 Series Sparctube™ Switching Spark Gap

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## Product Dimensions



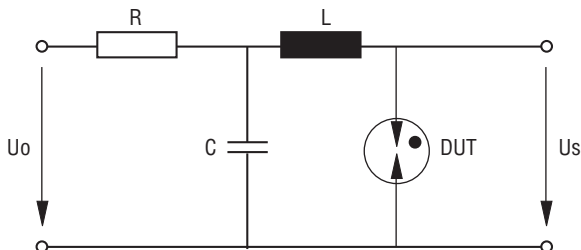
## How to Order



## Typical Part Marking

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

## Test Circuit



$U_o$  ..... 620 V  
 $R$  ..... See Note  
 $C$  ..... 470 nF  
 $L$  ..... 0.5  $\mu$ H  
 $DUT$  ..... Device Under Test  
 $U_s$  ..... Breakdown Voltages

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

# ST-0470 Series Sparctube™ Switching Spark Gap

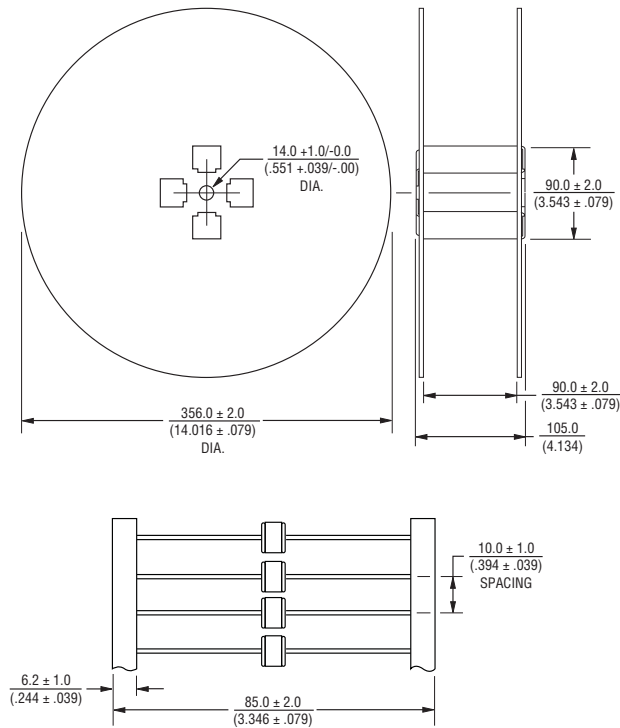
**BOURNS®**

## Packaging Specifications

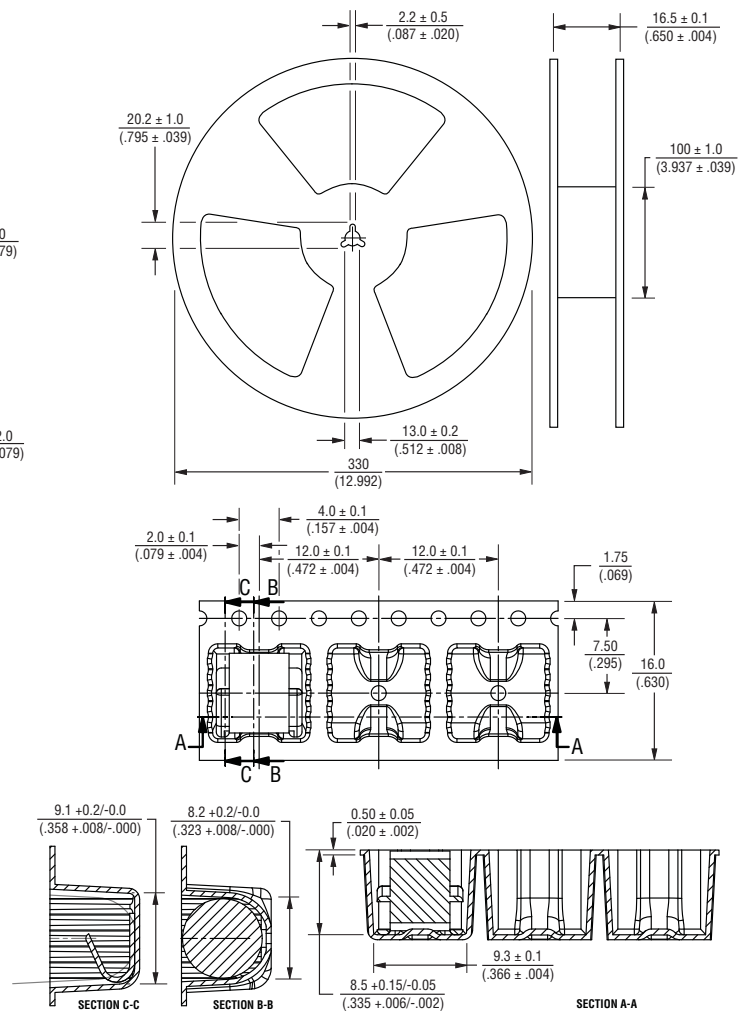
Models ST-0470-BBB, ST-0470-BLB and ST-0470-BCB\* ship standard bulk pack, 1,000 pcs./bag. The optional tape and reel packaging contains 1,000 pcs./reel for Model ST-0470-BLT; 500 pcs./reel for Model ST-0470-BBT.

\* Available in bulk packaging only.

**ST-0470-BLT**



**ST-0470-BBT**



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

REV. 10/12

"Sparctube" is a registered trademark of Bourns, Inc. in the European Community, with pending trademark registration applications in the U.S. and China. Specifications are subject to change without notice.

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