



## Features

- Leadless, surface mount for economical assembly
- Low capacitance and insertion loss
- High surge current rating
- Fast response to transients
- Compact “mini” size
- RoHS compliant\* version available

## 2039-xxx-SM Precision, Fast Responding, High Voltage Gas Discharge Tube

Bourns now offers miniature Surface Mount (SM) 2-electrode GDT surge protectors with sparkover voltage up to 1100 V. Compatible with “pick and place” assembly systems and only 5 mm in diameter, the 2039 Series is ideal for board level protection of high bandwidth applications such as xDSL, cable broadband and high speed Ethernet. The 2039 Series features high energy-handling capability, long and stable life performance and low capacitance of less than 1 pF.

Bourns® GDTs are designed to prevent damage from transient disturbances by acting as a “crowbar” to create a short-to-ground circuit during conduction. When an electrical surge exceeds the defined breakdown voltage level of the GDT, the device becomes ionized and conduction takes place within a fraction of a microsecond. When the surge passes and system voltage returns to normal levels, the GDT returns to its high-impedance (off) state.

### Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31

Characteristic	Model No.	
	2039-80-SM	2039-110-SM
DC Sparkover $\pm 20\%$ @ 100 V/s	800 V	1100 V
Impulse Sparkover @ 1000 V/ $\mu$ s	1250 V	1500 V

Insulation Resistance (IR) .....	100 V .....	> $10^9 \Omega$
Arc Voltage .....	1 A .....	~ 10 V
Glow-Arc Transition Current .....		< 0.5 A
Capacitance .....	1 MHz .....	< 1 pF
DC Holdover Voltage <sup>1</sup> .....	135 V .....	< 150 ms
Max. Single Discharge <sup>2</sup> .....	5 kA .....	> 1 operation
Impulse Discharge Current .....	2.5 kA, 8/20 $\mu$ s <sup>2</sup> .....	> 10 operations
	100 A, 10/1000 $\mu$ s .....	> 100 operations
	10 A, 10/1000 $\mu$ s .....	> 1500 operations
Alternating Discharge Current .....	2.5 Arms, 1 s .....	> 10 operations
Operating and Storage Temperature .....		-55 to +85 °C

### Notes:

Sparkover limits after life +30/-25 %, IR >  $10^8 \Omega$ .

<sup>1</sup> Network applied.

<sup>2</sup> DC Sparkover may exceed +30/-25 % but will continue to protect without venting.



*Reliable Electronic Solutions*

**Asia-Pacific:** TEL +886- (0)2 25624117 • FAX +886- (0)2 25624116

**Europe:** TEL +41-41 768 5555 • FAX +41-41 768 5510

**The Americas:** TEL +1-951 781-5500 • FAX +1-951 781-5700

**www.bourns.com**

\* RoHS Directive 2002/95/EC Jan 27 2003 including Annex.

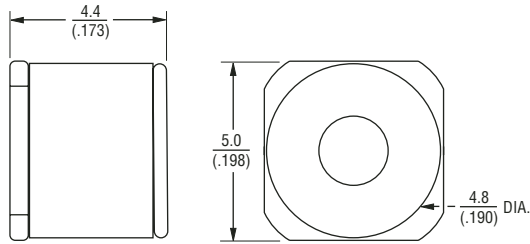
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

# 2039-xxx-SM Precision, Fast Responding, High Voltage Gas Discharge Tube



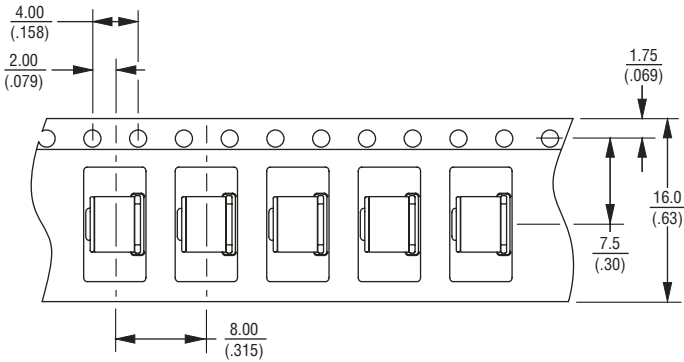
## Product Dimensions



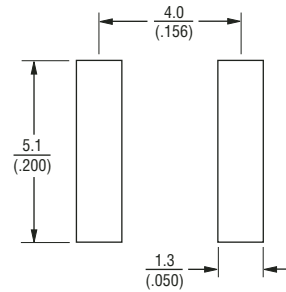
## Packaging Specifications

The Model 2039-xxx-SM ships standard bulk pack, 100 pieces per bag.

The optional reelpack (-RP) contains 1,500 pieces per reel. Reel is 13 " in diameter and 3/4 " wide.



## Recommended Pad Layout



DIMENSIONS =  $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

## How To Order

