

## Features

- Through-hole or cassette mount
- Low capacitance and insertion loss
- High surge current rating
- Fast response to transients
- Compact “mini” size
- RoHS compliant\* version available

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

Bourns now offers miniature through-hole 2-electrode GDT surge protectors with sparkover voltage up to 1100 V. At 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 within rated limits 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 rapid conduction takes place. 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	2039-110
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
Climatic Category (IEC 60068-1) .....		40/90/21

#### Notes:

- Sparkover limits after life +30/-25 %, IR >  $10^9 \Omega$ .
- At delivery AQL 0.65 Level II, DIN ISO 2859.

<sup>1</sup> Network applied.

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

## **BOURNS®**

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**www.bourns.com**

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

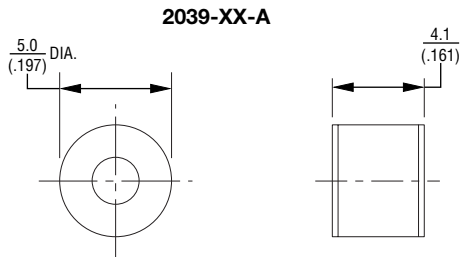
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

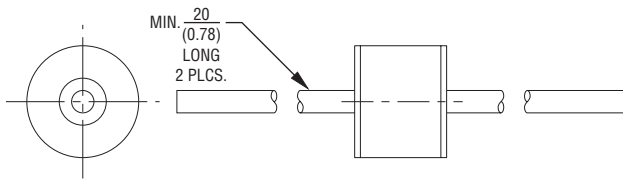
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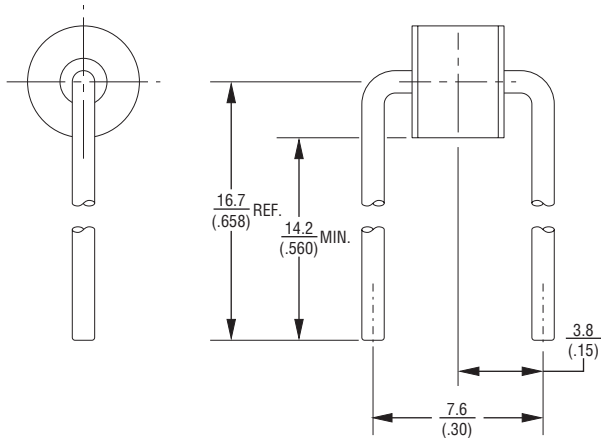
**Product Dimensions**



**2039-XX-B — 0.8 mm (0.032 in.) dia. lead wire**  
**2039-XX-C — 1.0 mm (0.040 in.) dia. lead wire**



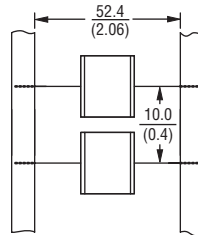
**2039-XX-B5 — 0.8 mm (0.032 in.) dia. lead wire**  
**2039-XX-C5 — 1.0 mm (0.040 in.) dia. lead wire**



2039-xx-B5, 2039-xx-C5 not available in reel pack

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

**Packaging Specifications**



Model 2039-xxx-nn ships standard bulk pack, 100 pcs./bag.

The optional reelpack (-T1) contains 1,000 pcs./reel. Reel is 14 " in diameter and 2.75 " wide.

**How to Order**

