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

BOURNS®

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 K.12, IEEE C62.31 and IEC 61643-311 GDT standards.

Characteristic	Model No.	
	2039-80-SM	**2039-110-SM**
DC Sparkover ± 20 % @ 100 V/s	800 V	1100 V
Impulse Sparkover [1] @ 1000V/μs	1250 V	1500 V

[1] Impulse Sparkover voltage is defined as typical values of distribution.

Insulation Resistance (IR)	100 V	> 10^9 Ω
Arc Voltage	1 A	~ 10 V
Glow-Arc Transition Current		< 0.5 A
Capacitance	1 MHz	< 1 pF
DC Holdover Voltage [2]	135 V	< 150 ms
Max. Single Discharge [3]	5 kA	> 1 operation
Impulse Discharge Current	2.5 kA, 8/20 μs[3]	> 10 operations
	100 A, 10/1000 μs	> 100 operations
	10 A, 10/1000 μs	> 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:
- Surface Mount (SM) parts may show a temporary increase in DCBD after the solder reflow process. Most devices will recover within 24 hours time. It should be noted that there is no quality defect nor change in protection levels during the temporary change in DCBD.
- Sparkover limits after life +30/-25 %, IR >10^8 Ω.
- At delivery AQL 0.65 Level II, DIN ISO 2859.
- Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev D.

[2] Network applied.
[3] DC Sparkover may exceed +30/-25 % but will continue to protect without venting.

How to Order

2039 - xx - SM - RP LF

Model Number Designator ————
Voltage (Divided by 10) ————
Surface Mount ————
Packaging Options ————
   Blank = Bulk Packaging (Standard)
   RP = Reelpack (Optional)
   RP3 = Reelpack (Optional)
RoHS Compliant Option ————
   Blank = Standard Product
   LF = RoHS Compliant Product

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116
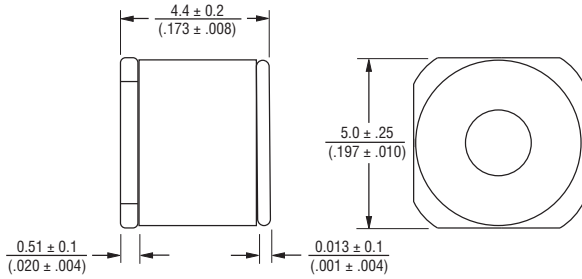**EMEA:** Tel: +36 88 520 390 • Fax: +36 88 520 211
The Americas: Tel: +1-951 781-5500 • Fax: +1-951 781-5700
www.bourns.com

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

Product Dimensions

4.4 ± 0.2
(.173 ± .008)

5.0 ± .25
(.197 ± .010)

0.51 ± 0.1
(.020 ± .004)

0.013 ± 0.1
(.001 ± .004)

TOLERANCE: .n = ±0.25 mm
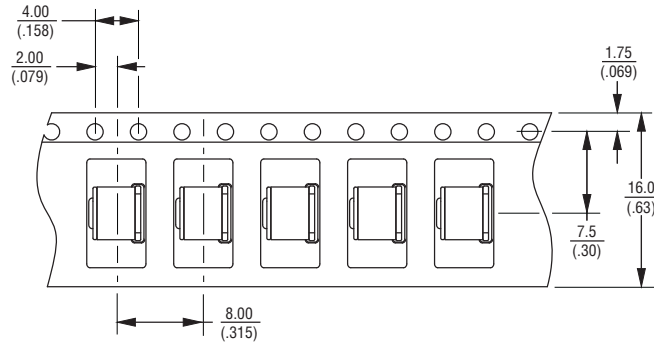
Recommended Pad Layout

4.0
(.156)

5.6
(.220)

1.3
(.050)
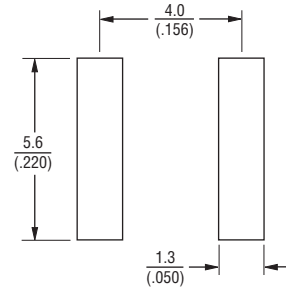
DIMENSIONS: $\frac{MM}{(INCHES)}$

Packaging Specifications

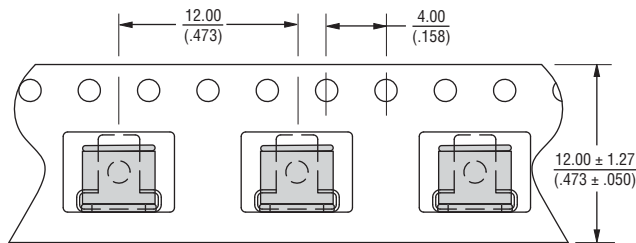The Model 2039-xxx-SM ships standard bulk pack, 250 pieces per bag, 4 bags per box.

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

4.00
(.158)

2.00
(.079)

1.75
(.069)

16.0
(.63)

7.5
(.30)

8.00
(.315)

-RP3
The optional -RP3 reelpack contains 1,000 pieces per reel. Reel is 13 inches in diameter and 11/16 inch wide.

12.00
(.473)

4.00
(.158)

12.00 ± 1.27
(.473 ± .050)

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

Unless otherwise specified, tolerances in decimals
are .X ± 0.3, .XX ± 0.15 for lengths in millimeters and ±1 ° for degrees.