

## Features

- Surface mount for economical assembly
- High surge current rating
- Designed to meet ITU-T K.12 class 5 surge current requirements
- Low capacitance and insertion loss
- Stable breakdown throughout life
- UL Recognized

## Applications

- Telecommunications
- Industrial electronics
- Commercial electronics
- Automotive, aircraft, military electronics

## 2029-xx-SMLF Heavy Duty Gas Discharge Tube Surge Arrestor

Bourns offers a heavy duty 2-electrode GDT surge arrestor in an 8x6 mm surface mount (SM) package. The Model 2029-xx-SMLF Series is categorized as a Class 5 rated GDT and attains the highest performance classification available under ITU K.12 requirements. High performance in a compact surface mount package makes this series ideal for use in heavily exposed telecommunications, commercial and industrial applications.

### Characteristics

Test Methods per ITU-T K.12, IEEE C62.31 and IEC 61643-311 GDT standards.

Characteristic	Model No.				
	2029-09-SMLF	2029-15-SMLF	2029-23-SMLF	2029-35-SMLF	2029-42-SMLF
DC Sparkover $\pm 20\%$ @ 100 V/s	90 V	150 V	230 V	350 V	420 V
Impulse Sparkover <sup>(1)</sup>					
100 V/ $\mu$ s (Typical)	275 V	325 V	450 V	600 V	650 V
100 V/ $\mu$ s (99 %)	375 V	375 V	500 V	625 V	750 V
Impulse Sparkover <sup>(1)</sup>					
1 kV/ $\mu$ s (Typical)	525 V	525 V	650 V	775 V	850 V
1 kV/ $\mu$ s (99 %)	600 V	625 V	750 V	875 V	1000 V

<sup>(1)</sup> Impulse Sparkover voltage is defined as typical values of distribution.

Insulation Resistance .....	100 V (50 V for Model 2029-09-SMLF).....	> 10 <sup>10</sup> $\Omega$
Glow Voltage .....	10 mA.....	~ 70 V
Arc Voltage .....	> 1A.....	~ 12 V
Glow-Arc Transition Current .....		< 0.5 A
Capacitance.....	1 MHz .....	< 1 pF
DC Holdover Voltage <sup>(2)</sup> .....	135 V, (52 V for Model 2029-09-SMLF; 80 V for Model 2029-15-SMLF) .....	< 150 ms
Impulse Discharge Current.....	25000 A, 8/20 $\mu$ s .....	1 operation minimum <sup>(3)</sup>
	20000 A, 8/20 $\mu$ s.....	> 10 operations
	5 kA, 10/350 $\mu$ s .....	1 operation minimum <sup>(3)</sup>
	100 A, 10/1000 $\mu$ s.....	> 300 operations
	10 A, 10/1000 $\mu$ s.....	> 1500 operations
Alternating Discharge Current .....	65 Arms, 11 cycles .....	1 operation minimum <sup>(3)</sup>
	20 Arms, 1 s.....	> 10 operations
Operating Temperature.....		-55 to +105 °C
Climatic Category (IEC 60068-1).....		40/90/21

### Notes:

- **UL recognized component, UL File E153537.**
- Model number marking on tube: 2029-xxxV.
- 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  $\pm 25\%$  and IR >10<sup>8</sup>  $\Omega$  after life.
- At delivery AQL 0.65 Level II, DIN ISO 2859.
- Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev D.

<sup>(2)</sup> Network applied.

<sup>(3)</sup> DC Sparkover may exceed  $\pm 20\%$  after discharge, but will continue to protect without venting.

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

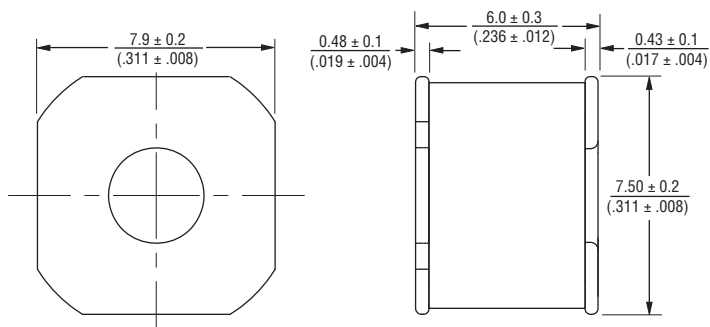
Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

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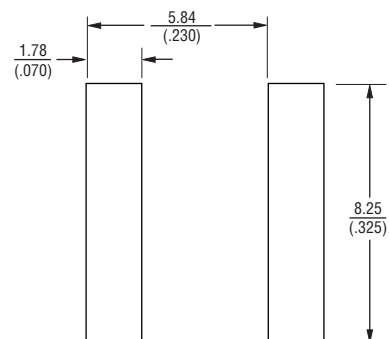


## Product Dimensions



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

## Recommended Pad Layout



TOLERANCES:  $\pm \frac{0.25}{(0.10)}$

## How to Order

**2029 - xx - SM -RP LF**

Model Number Designator \_\_\_\_\_

Voltage (Divided by 10) \_\_\_\_\_  
 09 = 90 V      23 = 230 V      42 = 420 V  
 15 = 150 V      35 = 350 V

Surface Mount \_\_\_\_\_

Packaging Option \_\_\_\_\_  
 Blank = Bulk Packaging (Standard)  
 -RP = 16 mm Reelpack (Optional)

RoHS Compliancy \_\_\_\_\_  
 LF = RoHS Compliant Product

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