



## 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

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

Bourns offers a heavy duty 2-electrode GDT surge arrester 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.

### Additional Information

Click these links for more information:

[PRODUCT SELECTOR](#)

[TECHNICAL LIBRARY](#)

[INVENTORY](#)

[SAMPLES](#)

[CONTACT](#)

### 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) 100 V/ $\mu$ s (99 %)	275 V 375 V	325 V 375 V	450 V 500 V	600 V 625 V	650 V 750 V
Impulse Sparkover <sup>(1)</sup> 1 kV/ $\mu$ s (Typical) 1 kV/ $\mu$ s (99 %)	525 V 600 V	525 V 625 V	650 V 750 V	775 V 875 V	850 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
Storage Temperature .....		-55 to +105 °C
Operating Temperature.....		-55 to +105 °C
Climatic Category (IEC 60068-1).....		55/105/21
Moisture Sensitivity Level .....		1
ESD Classification (HBM).....		N/A

#### 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>7</sup>  $\Omega$  after life (-25%/+30% for Model 2029-09-SM)
- 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 2015/863, Mar 31, 2015 and Annex.

\*\*Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at [www.bourns.com/docs/legal/disclaimer.pdf](http://www.bourns.com/docs/legal/disclaimer.pdf).

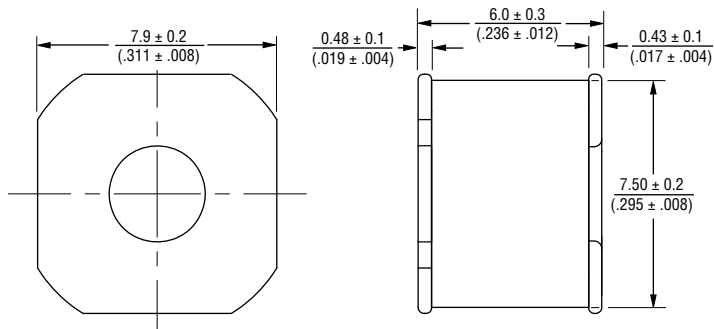


**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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

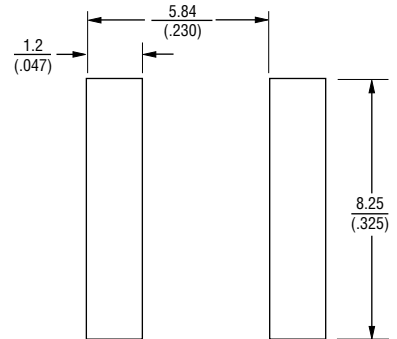


## Product Dimensions



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

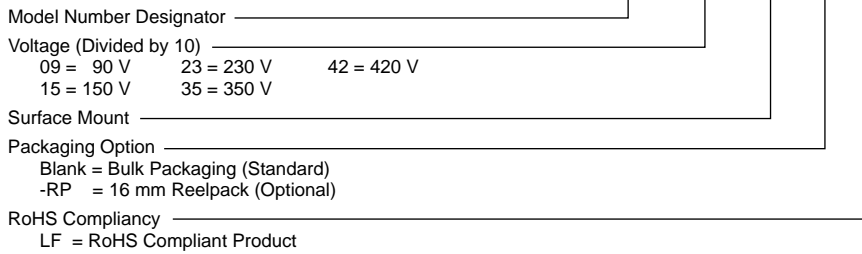
## Recommended Pad Layout



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

## How to Order

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

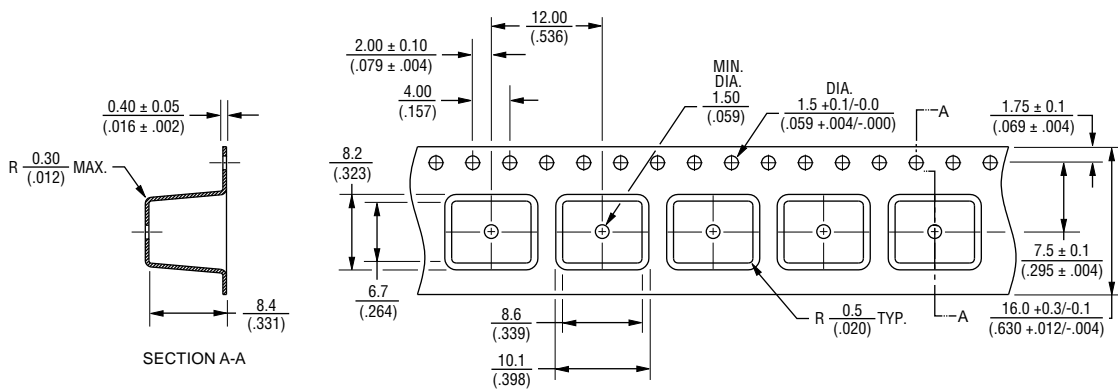


Packaging Specifications

Model	Standard Packaging Quantity			
	Bulk (Bag)	Tray	Box	Reel
2029-xx-SMLF	250		1000	
2029-xx-SM-RPLF				500

-RP

Reel is 33 cm in diameter and 3 cm wide.



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

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

**BOURNS®**

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com

www.bourns.com

REV. A 09/19

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at [www.bourns.com/docs/legal/disclaimer.pdf](http://www.bourns.com/docs/legal/disclaimer.pdf).