




## 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 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) 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) .....	$> 10^{10} \Omega$
Glow Voltage .....	10 mA .....	$\sim 70$ V
Arc Voltage .....	$> 1$ A .....	$\sim 12$ 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  $> 10^7 \Omega$  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.



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

\* 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.

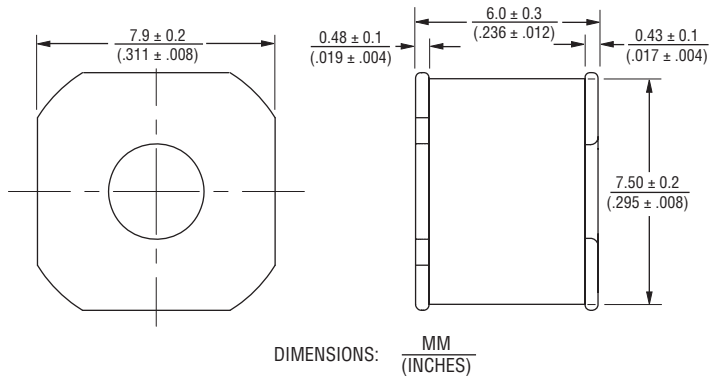
Users should verify actual device performance in their specific applications.

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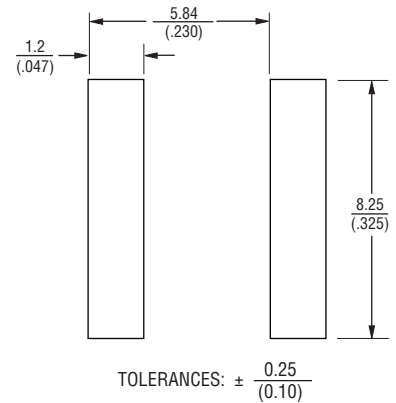
## 2029-xx-SMLF Heavy Duty Gas Discharge Tube Surge Arrestor

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### Product Dimensions



### Recommended Pad Layout



### 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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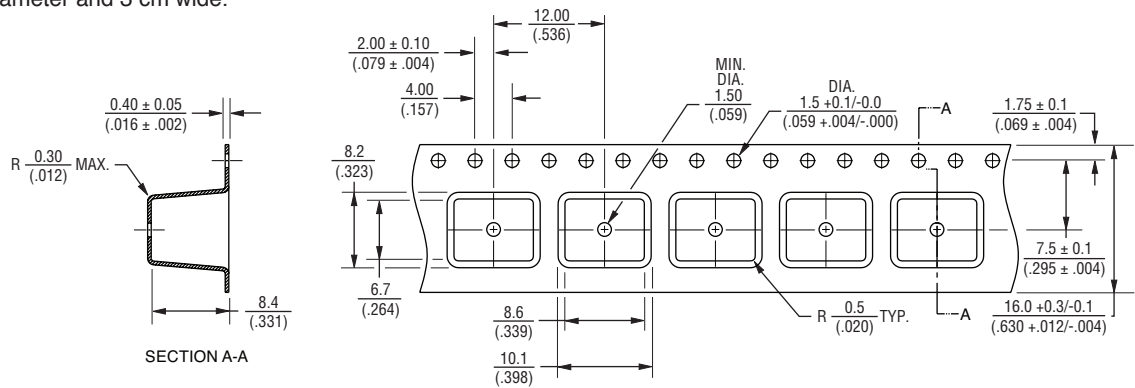
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### Packaging Specifications

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.

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