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.

### Characteristics

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

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>DC Sparkover ±20 % @ 100 V/s</td>
<td>90 V</td>
<td>150 V</td>
<td>230 V</td>
<td>350 V</td>
<td>420 V</td>
</tr>
<tr>
<td>Impulse Sparkover (1)</td>
<td>275 V</td>
<td>325 V</td>
<td>450 V</td>
<td>600 V</td>
<td>650 V</td>
</tr>
<tr>
<td>100 V/μs (Typical)</td>
<td>375 V</td>
<td>375 V</td>
<td>500 V</td>
<td>625 V</td>
<td>750 V</td>
</tr>
<tr>
<td>100 V/μs (99 %)</td>
<td>525 V</td>
<td>525 V</td>
<td>650 V</td>
<td>775 V</td>
<td>850 V</td>
</tr>
<tr>
<td>Impulse Sparkover (1)</td>
<td>600 V</td>
<td>625 V</td>
<td>750 V</td>
<td>875 V</td>
<td>1000 V</td>
</tr>
</tbody>
</table>

(1) Impulse Sparkover voltage is defined as typical values of distribution.

- **Insulation Resistance** ................................................................. 100 V (50 V for Model 2029-09-SMLF) ............... > 10¹⁰ Ω
- **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 (2)** ................................................................. 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 μs ............................................. 1 operation minimum (3)
- 20000 A, 8/20 μs ................................................ 10 operations
- 5 kA, 10/350 μs ................................................................. 1 operation minimum (3)
- 100 A, 10/1000 μs ................................................................. 300 operations
- 10 A, 10/1000 μs ................................................................. 1500 operations
- **Alternating Discharge Current** ................................................................. 65 Arms, 11 cycles ............................................. 1 operation minimum (3)
- 20 Arms, 1 s ................................................................. 10 operations
- **Storage Temperature** ................................................................. -55 to +105 °C
- **Operating Temperature** ................................................................. -55 to +105 °C
- **Climatic Category** (IEC 60688-1) ................................................................. 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 ± 25% and IR >10⁷ Ω 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.
- Network applied.
- DC Sparkover may exceed ±20 % after discharge, but will continue to protect without venting.

* 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.

Additional Information

Click these links for more information:

- PRODUCT SELECTOR
- TECHNICAL LIBRARY
- INVENTORY
- SAMPLES
- CONTACT
**2029-xx-SMLF Heavy Duty Gas Discharge Tube Surge Arrester**

**Product Dimensions**

- **Dimensions (MM)**
  - 7.9 ± 0.2
  - 6.0 ± 0.3
  - 0.43 ± 0.1
  - 7.50 ± 0.2

- **Dimensions (INCHES)**
  - 0.311 ± .008
  - 0.236 ± 0.012
  - 0.017 ± .004
  - 0.295 ± .008

**Recommended Pad Layout**

- **Tolerances:** ± 0.25 (0.10)

**How to Order**

- **Model Number Designator**
  - 2029 - xx - SM -RP LF

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

- **Surface Mount**

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

- **RoHS Compliancy**
  - LF = RoHS Compliant Product

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**Packaging Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Standard Packaging Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bulk (Bag)</td>
</tr>
<tr>
<td>2029-xx-SMLF</td>
<td>250</td>
</tr>
<tr>
<td>2029-xx-SM-RPLF</td>
<td>500</td>
</tr>
</tbody>
</table>

-RP
Reel is 33 cm in diameter and 3 cm wide.

**DIMENSIONS:**

**MIN.** (INCHES) **MAX.**

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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REV. A 09/19
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