Bourns now offers a surface mount (SM) 2-electrode GDT surge protection device. The industry-leading quality and features of the Bourns® miniature 2035 Series GDT continue in this new SM version. Compatible with “pick and place” assembly systems, the SM is ideal for high-density applications such as PCBs for 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>
<th>Characteristic</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Sparkover ±15 %</td>
<td>2035-09 2035-15 2035-20 2035-23 2035-25 2035-30</td>
</tr>
<tr>
<td>(±20 % for Model 2035-09) @ 100 V/s</td>
<td>90 V 150 V 200 V 230 V 250 V 300 V</td>
</tr>
<tr>
<td>Impulse Sparkover (1)</td>
<td>100 V/μs 1000 V/μs</td>
</tr>
<tr>
<td>100 V/μs</td>
<td>350 V 400 V 425 V 450 V 475 V 525 V</td>
</tr>
<tr>
<td>1000 V/μs</td>
<td>525 V 550 V 575 V 600 V 625 V 650 V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Sparkover ±15 %</td>
<td>2035-35 2035-40 2035-42 2035-47 2035-60</td>
</tr>
<tr>
<td>@ 100 V/s</td>
<td>350 V 400 V 420 V 470 V 600 V</td>
</tr>
<tr>
<td>Impulse Sparkover (1)</td>
<td>100 V/μs 1000 V/μs</td>
</tr>
<tr>
<td>100 V/μs</td>
<td>600 V 650 V 675 V 750 V 950 V</td>
</tr>
<tr>
<td>1000 V/μs</td>
<td>750 V 800 V 850 V 950 V 1100 V</td>
</tr>
</tbody>
</table>

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

Insulation Resistance (IR) ..............100 V (50 V for Model 2035-09). ............................................. > 10^{10} Ω
Glow Voltage.............................10 mA ......................................................... ~ 70 V
Arc Voltage ......................................................... >1 A ......................................................... ~ 10 V
Glow-Arc Transition Current.............1 MHz .............................................................. <0.5 A
Capacitance .................................................1 MHz .............................................................. <1 pF
DC Holdover Voltage (2) ..............135 V, (52 V for Model 2035-09), .............................. <150 ms
.............................................................. 80 V for Model 2035-15)
Impulse Discharge Current..............10000 A, 8/20 μs (3). ...................................... 1 operation minimum
.............................................................. 5000 A, 8/20 μs ......................................................... >10 operations
.............................................................. 1000 A, 8/20 μs ......................................................... 1 operation
.............................................................. 100 A, 10/1000 μs ......................................................... >300 operations
.............................................................. 100 A, 10/1000 μs ......................................................... >500 operations
Alternating Discharge Current.......20 Arms, 11 cycles (3). ...................................... 1 operation minimum
.............................................................. 5 Arms, 1 s ......................................................... >10 operations
Operating Temperature..................-55 to +85 °C
Climatic Category (IEC 60068-1). .................. 40/90/21

Notes:

- UL Recognized component, UL File E155357
- 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 ±20 % (-25 %, +30 % for Model 2035-09, 2035-60), IR >10^{10}.
- 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.
- Tube may exceed ±20 % but will continue to protect without venting.

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.

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2035-xx-SM Precision Gas Discharge Tube Surge Protector

**Product Dimensions**

<table>
<thead>
<tr>
<th>DIMENSIONS: MM</th>
<th>(INCHES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4 ± 0.2 (1.73 ± 0.008)</td>
<td>5.0 ± 0.25 (1.97 ± 0.010)</td>
</tr>
<tr>
<td>0.51 ± 0.1 (0.020 ± 0.004)</td>
<td>0.93 ± 0.1 (0.037 ± 0.004)</td>
</tr>
</tbody>
</table>

**Recommended Pad Layout**

**How to Order**

- **Model Number Designator**: 2035 - xx - SM - RP LF
- **Voltage**
- **Surface Mount**
- **Packaging Options**
  - Blank = Bulk Packaging (Standard)
  - RP = Reelpack (Optional)
  - RP3 = Reelpack (Optional)
  - RP4 = Reelpack (Optional)
- **RoHS Compliant Option**
  - Blank = Standard Product
  - LF = RoHS Compliant Product

**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>2035-SM</td>
<td>250</td>
</tr>
<tr>
<td>2035-SM-RP</td>
<td></td>
</tr>
<tr>
<td>2035-SM-RP3</td>
<td>1000</td>
</tr>
<tr>
<td>2035-SM-RP4</td>
<td>1000</td>
</tr>
</tbody>
</table>

- **-RP**
  - Reel is 13 inches in diameter and 3/4 inch wide.

- **-RP3**
  - Reel is 13 inches in diameter and 11/16 inch wide.

- **-RP4**
  - Reel is 13 inches in diameter and 11/16 inch wide.
  - RP4 features the GDTs placed upside-down inside the carrier tape.

**Specifications**

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

REV. 0 09/19

Specifications are subject to change without notice.

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