Features
- Leadless, surface mount for economical assembly
- Compact mini-size
- Low capacitance and insertion loss
- RoHS compliant*
- UL Recognized

2003 Series Gas Discharge Tube Surge Protector

Bourns offers a low-cost surface mount (SM) 2-electrode GDT surge protection device. The 2003 Series is ideal for broadband protection due to its ultra-low capacitance. The 2003 Series offers superior protection characteristics suitable for telecommunications, commercial and industrial applications.

Characteristics

Test Methods per ITU-T (CCITT) K.12 and IEEE C62.31

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<tbody>
<tr>
<td>DC Sparkover ± 20 % @ 100 V/s</td>
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<tr>
<td>Maximum Impulse Breakdown Voltage 100V/μs</td>
<td></td>
<td>600 V</td>
<td>600 V</td>
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<td>600 V</td>
<td>600 V</td>
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<tr>
<td>Maximum Impulse Breakdown Voltage 1000V/μs</td>
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<td>700 V</td>
<td>700 V</td>
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<tr>
<td>DC Holdover Voltage &lt;150 ms</td>
<td></td>
<td>52 V</td>
<td>52 V</td>
<td>80 V</td>
<td>80 V</td>
<td>135 V</td>
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</thead>
<tbody>
<tr>
<td>DC Sparkover ± 20 % @ 100 V/s</td>
<td></td>
<td>230 V</td>
<td>250 V</td>
<td>350 V</td>
<td>400 V</td>
<td>470 V</td>
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<tr>
<td>Maximum Impulse Breakdown Voltage 100V/μs</td>
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<td>600 V</td>
<td>600 V</td>
<td>600 V</td>
<td>700 V</td>
<td>900 V</td>
</tr>
<tr>
<td>Maximum Impulse Breakdown Voltage 1000V/μs</td>
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<td>700 V</td>
<td>700 V</td>
<td>800 V</td>
<td>800 V</td>
<td>1100 V</td>
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<tr>
<td>DC Holdover Voltage &lt;150 ms</td>
<td></td>
<td>135 V</td>
<td>135 V</td>
<td>135 V</td>
<td>135 V</td>
<td>135 V</td>
</tr>
</tbody>
</table>

Glow Voltage ......................................................... 10 mA ................................................................. ~ 70 V
Arc Voltage ......................................................... 1 A ................................................................. ~ 10 V
Glow-Arc Transition Current ................................... < 1 A
Maximum Impulse Discharge Current 8/20 μs, 1 Time .......... 2000 A
8/20 μs, 10 Times ............................................. 1000 A
Impulse Life ......................................................... 8/20 μs, 100 A ............................................ 300 operations
Alternating Discharge Current 50 Hz, 1 Sec ................. 1 A
DC Holdover Voltage <150 ms ..................................... 135 V
Minimum Insulation Resistance ................................ 1 gigaohm
Maximum Capacitance ............................................ 0.5 pF
Operating Temperature .......................................... -40 °C to +90 °C
Moisture Sensitivity Level ...................................... 1
ESD Classification (HBM) .......................................... 6

Notes:
• UL Recognized component, UL File E153537.

Bourns offers RoHS compliant* versions of the 2003 Series. These versions are lead-free and comply with the RoHS Directive 2015/863, Mar 31, 2015 and Annex. 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 disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com
EMEA: Tel: +36 88 520 390 • Email: eurocus@bourns.com
The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com
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# 2003 Series Gas Discharge Tube Surge Protector

## Product Dimensions

![Diagram of product dimensions](image)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>3.5 ± 0.2</td>
</tr>
<tr>
<td>Height</td>
<td>2.8 ± 0.2</td>
</tr>
<tr>
<td>Thickness</td>
<td>2.8 ± 0.2</td>
</tr>
</tbody>
</table>

## How to Order

**Model Number Designator**

- **2003 - xx - SM - RP LF**

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>(Divided by 10)</td>
<td></td>
</tr>
<tr>
<td>Surface Mount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging</td>
<td>RP = Reelpack</td>
<td></td>
</tr>
<tr>
<td>RoHS Compliancy</td>
<td>LF = RoHS Compliant Product</td>
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</tr>
</tbody>
</table>

## Recommended Pad Layout

![Diagram of recommended pad layout](image)

## Typical Part Marking

- 2003-07-SM-RP LF .............................................. B07
- 2003-09-SM-RP LF .............................................. B09
- 2003-12-SM-RP LF .............................................. B12
- 2003-20-SM-RP LF .............................................. B20
- 2003-23-SM-RP LF .............................................. B23
- 2003-25-SM-RP LF .............................................. B25
- 2003-40-SM-RP LF .............................................. B40
- 2003-47-SM-RP LF .............................................. B47

## Packaging Specifications

The Model 2003-xx-SM ships standard reelpack (-RP), 2,500 pieces per reel, 7,500 pieces per box. Reel is 330 mm in diameter and 12 mm wide.

![Diagram of packaging specifications](image)

## Specifications

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