



## 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

| Characteristic                    | Model No. |         |         |         |         |
|-----------------------------------|-----------|---------|---------|---------|---------|
|                                   | 2003-07   | 2003-09 | 2003-12 | 2003-15 | 2003-20 |
| DC Sparkover $\pm 20\%$ @ 100 V/s | 75 V      | 90 V    | 120 V   | 150 V   | 200 V   |
| Maximum Impulse Breakdown Voltage |           |         |         |         |         |
| 100V/ $\mu$ s                     | 600 V     | 600 V   | 600 V   | 600 V   | 600 V   |
| 1000V/ $\mu$ s                    | 700 V     | 700 V   | 700 V   | 700 V   | 700 V   |
| DC Holdover Voltage               |           |         |         |         |         |
| <150 ms                           | 52 V      | 52 V    | 80 V    | 80 V    | 135 V   |

| Characteristic                    | Model No. |         |         |         |         |
|-----------------------------------|-----------|---------|---------|---------|---------|
|                                   | 2003-23   | 2003-25 | 2003-35 | 2003-40 | 2003-47 |
| DC Sparkover $\pm 20\%$ @ 100 V/s | 230 V     | 250 V   | 350 V   | 400 V   | 470 V   |
| Maximum Impulse Breakdown Voltage |           |         |         |         |         |
| 100V/ $\mu$ s                     | 600 V     | 600 V   | 600 V   | 700 V   | 900 V   |
| 1000V/ $\mu$ s                    | 700 V     | 700 V   | 800 V   | 800 V   | 1100 V  |
| DC Holdover Voltage               |           |         |         |         |         |
| <150 ms                           | 135 V     | 135 V   | 135 V   | 135 V   | 135 V   |

|                                         |                              |                  |
|-----------------------------------------|------------------------------|------------------|
| Glow Voltage .....                      | 10 mA.....                   | ~ 70 V           |
| Arc Voltage .....                       | 1 A.....                     | ~ 10 V           |
| Glow-Arc Transition Current .....       |                              | < 1 A            |
| Maximum Impulse Discharge Current ..... | 8/20 $\mu$ s, 1 Time .....   | 2000 A           |
|                                         | 8/20 $\mu$ s, 10 Times ..... | 1000 A           |
| Impulse Life .....                      | 8/20 $\mu$ s, 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 .....               | 1 MHz .....                  | 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®**

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\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

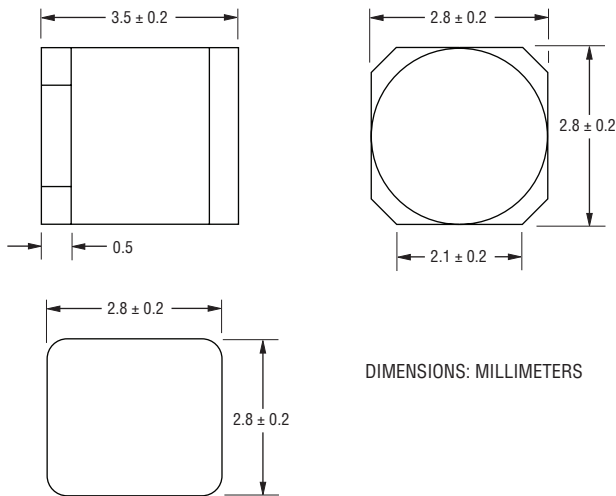
Users should verify actual device performance in their specific applications.

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### Product Dimensions



### How to Order

Model Number Designator: 2003 - xx - SM - RP LF

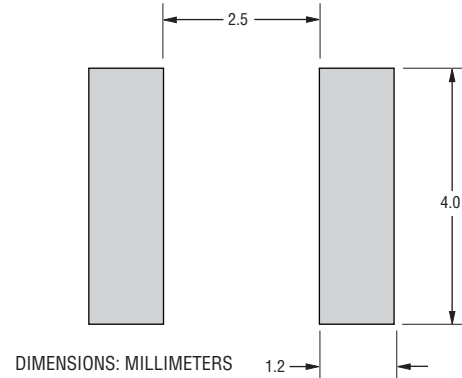
Voltage (Divided by 10):

Surface Mount:

Packaging: RP = Reelpack

RoHS Compliance: LF = RoHS Compliant Product

### Recommended Pad Layout

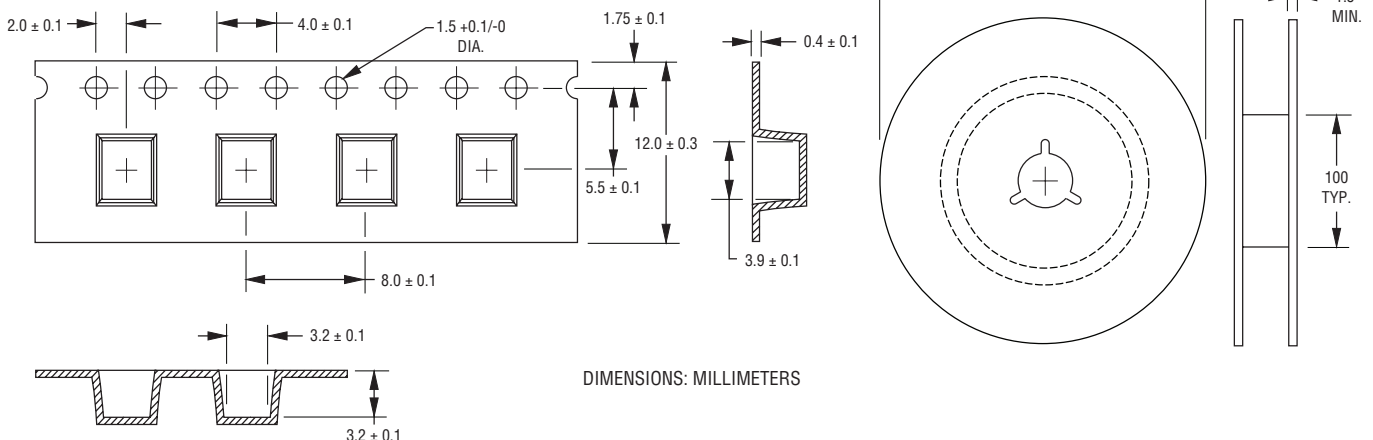


### Typical Part Marking

|                 |     |
|-----------------|-----|
| 2003-07-SM-RPLF | B07 |
| 2003-09-SM-RPLF | B09 |
| 2003-12-SM-RPLF | B12 |
| 2003-15-SM-RPLF | B15 |
| 2003-20-SM-RPLF | B20 |
| 2003-23-SM-RPLF | B23 |
| 2003-25-SM-RPLF | B25 |
| 2003-35-SM-RPLF | B35 |
| 2003-40-SM-RPLF | B40 |
| 2003-47-SM-RPLF | 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.



REV. A 10/17

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