



## Features

- Leadless, surface mount for economical assembly
- Compact mini-size
- High surge current rating
- Low capacitance and insertion loss
- Stable breakdown throughout life

- UL Recognized
- RoHS compliant\* version available

## 2035-xx-SM Precision Gas Discharge Tube Surge Protector

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 (CCITT) K.12, IEEE C62.31

| Characteristic                                                       | Model No.      |                |                |                |                |                |
|----------------------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                                                                      | 2035-09        | 2035-15        | 2035-20        | 2035-23        | 2035-25        | 2035-30        |
| DC Sparkover $\pm 15\%$<br>( $\pm 20\%$ for Model 2035-09) @ 100 V/s | 90 V           | 150 V          | 200 V          | 230 V          | 250 V          | 300 V          |
| Impulse Sparkover<br>100 V/ $\mu$ s<br>1000 V/ $\mu$ s               | 350 V<br>525 V | 400 V<br>550 V | 425 V<br>575 V | 450 V<br>600 V | 475 V<br>625 V | 525 V<br>650 V |

| Characteristic                                                                        | Model No.      |                |                |                |                 |
|---------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|-----------------|
|                                                                                       | 2035-35        | 2035-40        | 2035-42        | 2035-47        | 2035-60         |
| DC Sparkover $\pm 15\%$ @ 100 V/s<br>( $-12\%$ , $+15\%$ for Model 2035-60) @ 100 V/s | 350 V          | 400 V          | 420 V          | 470 V          | 600 V           |
| Impulse Sparkover<br>100 V/ $\mu$ s<br>1000 V/ $\mu$ s                                | 600 V<br>750 V | 650 V<br>800 V | 675 V<br>850 V | 750 V<br>950 V | 950 V<br>1100 V |

|                                        |                                          |                     |
|----------------------------------------|------------------------------------------|---------------------|
| Insulation Resistance (IR).....        | 100 V (50 V for Model 2035-09) .....     | $10^{10} \Omega$    |
| Glow Voltage.....                      | 10 mA.....                               | ~ 70 V              |
| Arc Voltage.....                       | >1 A.....                                | ~ 10 V              |
| Glow-Arc Transition Current .....      | .....                                    | < 0.5 A             |
| Capacitance.....                       | 1 MHz.....                               | < 1 pF              |
| DC Holdover Voltage <sup>1</sup> ..... | >135 V, (52 V for Model 2035-09, .....   | < 150 ms            |
| Impulse Discharge Current .....        | 80 V for Model 2035-15)                  |                     |
|                                        | 10000 A, 8/20 $\mu$ s <sup>2</sup> ..... | 1 operation minimum |
|                                        | 5000 A, 8/20 $\mu$ s.....                | > 10 operations     |
|                                        | 100 A, 10/1000 $\mu$ s .....             | > 300 operations    |
| Alternating Discharge Current.....     | 100 A, 10/700 $\mu$ s .....              | > 500 operations    |
|                                        | 20 Arms, 11 cycles <sup>2</sup> .....    | 1 operation minimum |
|                                        | 5 Arms, 1 s.....                         | > 10 operations     |
| Operating Temperature.....             | .....                                    | -55 to +85 °C       |

### Notes:

**UL Recognized component, UL File E153537**

Sparkover limits after life  $\pm 20\%$  ( $-25\%$ ,  $+30\%$  for Model 2035-09, 2035-60), IR  $> 10^8 \Omega$ .

<sup>1</sup> Network applied.

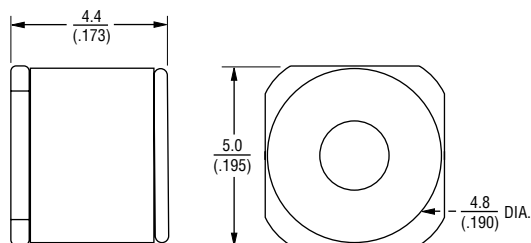
<sup>2</sup> Tube may exceed  $\pm 20\%$  but will continue to protect without venting.



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**BOURNS®**

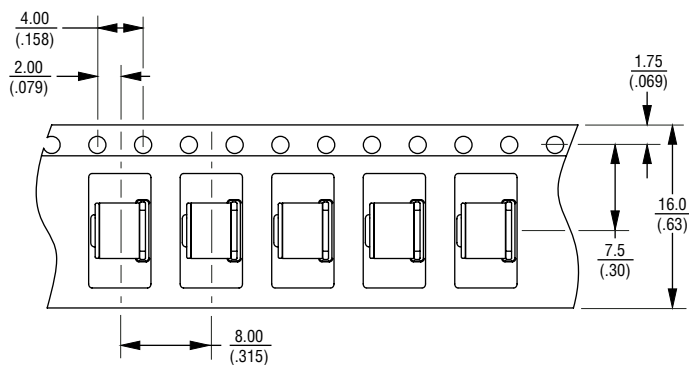
### Product Dimensions



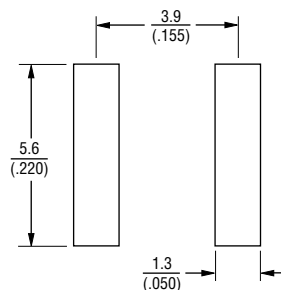
### Packaging Specifications

The Model 2035-xx-SM ships standard bulk pack, 100 pieces per bag.

The optional reelpack (-RP) contains 1,500 pieces per reel. Reel is 13 " in diameter and 3/4 " wide.



### Recommended Pad Layout



DIMENSIONS =  $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

### How To Order

2035 - xx - SM - RP LF

**Model Number Designator** \_\_\_\_\_

**Voltage** \_\_\_\_\_

**Surface Mount** \_\_\_\_\_

**Packaging Options** \_\_\_\_\_

Blank = Bulk Packaging (Standard)  
RP = Reelpack (Optional)

**Lead Free Option** \_\_\_\_\_

Blank = Standard Product  
LF = Lead Free / RoHS Compliant Product