



## Features

- Surface mount for economical assembly
- High surge current rating
- Low capacitance and insertion loss
- Stable breakdown throughout life
- 8 mm diameter, 6 mm long
- UL Recognized

## Applications

- Telecommunications
- Industrial electronics
- Commercial electronics
- Automotive, aircraft, military electronics

# 2027-xx-SM Precision Gas Discharge Tube Surge Protector

Bourns offers an 8 x 6 mm Surface Mount (SM) 2-electrode GDT surge protection device. The industry-leading quality and features of Bourns® 2027 Series GDT continue in this new SM version. Compatible with “pick and place” assembly systems, the 2027-SM is ideal for compact applications such as PCBs for telecommunications, commercial and industrial applications.

### Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31, RUS PE-80, Telcordia GR 1361

Characteristic	Model No.					
	2027-07-SM	2027-09-SM	2027-15-SM	2027-20-SM	2027-23-SM	2027-25-SM
DC Sparkover ±15 % (±20 % for Models 2027-07-SM & 2027-09-SM) @ 100 V/s	75 V	90 V	150 V	200 V	230 V	250 V
Impulse Sparkover						
100 V/μs	300 V	300 V	350 V	400 V	450 V	475 V
1000 V/μs	500 V	500 V	575 V	600 V	675 V	700 V

Characteristic	Model No.					
	2027-30-SM	2027-35-SM	2027-40-SM	2027-42-SM	2027-47-SM	2027-60-SM
DC Sparkover ±15 % @ 100 V/s	300 V	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover						
100 V/μs	550 V	600 V	650 V	675 V	725 V	850 V
1000 V/μs	800 V	875 V	925 V	950 V	1000 V	1100 V

Insulation Resistance .....	100 V (50 V for Models 2027-07-SM & 2027-09-SM) .....	> 10 <sup>10</sup> Ω
Glow Voltage .....	10 mA.....	~ 70 V
Arc Voltage .....	> 1A .....	~ 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 Models 2027-07-SM & 2027-09-SM; 80 V for Model 2027-15-SM)....	< 150 ms
Impulse Discharge Current.....	20000 A, 8/20 μs <sup>2</sup> .....	1 operation minimum
	10000 A, 8/20 μs.....	> 10 operations
	500 A, 10/1000 μs .....	> 400 operations
	100 A, 10/1000 μs or 10/700 μs .....	> 1000 operations
Alternating Discharge Current .....	65 Arms, 11 cycles <sup>2</sup> .....	1 operation minimum
	10 Arms, 1 s.....	> 10 operations
Operating Temperature.....	.....	-55 to +85 °C

### Notes:

- **UL recognized component, UL File E153537.**
- Model number marking on tube: 27-xxxV.
- Surface Mount (SM) parts may show an increase in DCBD after the solder reflow process. There is no quality defect nor a change in the protection level, even if the DCBD is outside the original tolerance.
- Sparkover limits ±20 % after life, IR >10<sup>8</sup> Ω (-25 %, +30 % for Models 2027-07-SM, 2027-09-SM and 2027-60-SM).
- At delivery AQL 0.65 Level II, DIN ISO 2859.

<sup>1</sup> Network applied.

<sup>2</sup> DC Sparkover may exceed ±20 % after discharge, but will continue to protect without venting.

\*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.

Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

# 2027-xx-SM Precision Gas Discharge Tube Surge Protector

**BOURNS®**

## Product Dimensions



## Recommended Pad Layout



## Packaging Specifications

Model 2027-xx-SM ships standard bulk pack, 100 pcs./bag.

The optional reelpack (-RP) contains 500 pcs./reel. Reel is 33 cm in diameter and 3 cm wide.

The optional reelpack (-RP2) contains 500 pcs./reel. Reel is 33 cm in diameter and 3 cm wide.



## -RP2



## How to Order

2027 - xx - SM - RP - LF

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

Voltage (Divided by 10) \_\_\_\_\_

07 = 75 V	15 = 150 V	23 = 230 V	30 = 300 V	40 = 400 V	47 = 470 V
09 = 90 V	20 = 200 V	25 = 250 V	35 = 350 V	42 = 420 V	60 = 600 V

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

Packaging Option \_\_\_\_\_

Blank = Bulk Packaging (Standard)  
 RP = 24 mm Reelpack (Optional)  
 RP2 = 16 mm Reelpack (Optional)

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

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

REV. 09/10

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