



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 

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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 K.12, IEEE C62.31 and IEC 61643-311 GDT standards.

Characteristic	Model No.					
	2027-07-SM	2027-09-SM	2027-15-SM	2027-20-SM	2027-23-SM	2027-25-SM
DC Sparkover $\pm 15\%$ ($\pm 20\%$ 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 ⁽¹⁾						
100 V/ μ s	300 V	300 V	350 V	400 V	450 V	475 V
1000 V/ μ s	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 $\pm 15\%$ @ 100 V/s	300 V	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover ⁽¹⁾						
100 V/ μ s	550 V	600 V	650 V	675 V	725 V	850 V
1000 V/ μ s	800 V	875 V	925 V	950 V	1000 V	1100 V

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

Insulation Resistance	100 V (50 V for Models 2027-07-SM & 2027-09-SM)	$> 10^{10} \Omega$
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 ⁽²⁾	135 V, (52 V for Models 2027-07-SM & 2027-09-SM; 80 V for Model 2027-15-SM) ...	< 150 ms
Impulse Discharge Current	25000 A, 8/20 μ s ⁽³⁾	1 operation minimum
	10000 A, 8/20 μ s	> 10 operations
	2000 A, 10/350 μ s	2 operations
	500 A, 10/1000 μ s	> 400 operations
	100 A, 10/1000 μ s or 10/700 μ s	> 1000 operations
Alternating Discharge Current	65 Arms, 11 cycles***	1 operation minimum
	10 Arms, 1 s	> 10 operations
Operating Temperature		-55 to +125 °C
Climatic Category (IEC 60068-1)		40/90/21

Notes:

- **UL recognized component, UL File E153537.**
- Model number marking on tube: 27-xxxV.
- 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 $\pm 20\%$ after life, IR $> 10^8 \Omega$ (-25% , $+30\%$ for Models 2027-07-SM, 2027-09-SM and 2027-60-SM).
- At delivery AQL 0.65 Level II, DIN ISO 2859.
- Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev D.

⁽²⁾ Network applied.

⁽³⁾ DC Sparkover may exceed $\pm 20\%$ after discharge, but will continue to protect without venting.

*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.

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WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

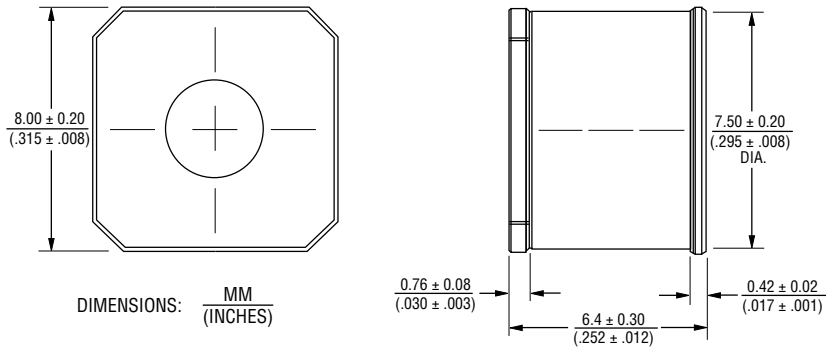
Applications

- Telecommunications
- Industrial electronics
- Commercial electronics

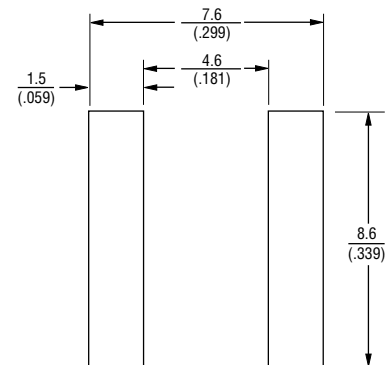
2027-xx-SM Precision Gas Discharge Tube Surge Protector

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Product Dimensions



Recommended Pad Layout



How to Order

Model Number Designator _____

Voltage (Divided by 10) _____

Surface Mount _____

Packaging Option _____

RoHS Compliant Option _____

2027 - xx - SM - RP LF

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

Blank = Bulk Packaging (Standard)
RP = 24 mm Reelpack (Optional)
RP2 = 16 mm Reelpack (Optional)
RP3 = 16 mm Reelpack / Vertical part alignment in tape (Optional)

Blank = Standard Product
LF = RoHS Compliant Product

Packaging Specifications

Model	Standard Packaging Quantity			
	Bulk (Bag)	Tray	Box	Reel
2027-xx-SM	250		1000	
2027-xx-SM-RP				500
2027-xx-SM-RP2				500

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The optional reelpacks (-RP, -RP2, -RP3) are 33 cm in diameter and 3 cm wide.

SECTION A-A

0.41 ± 0.10
(0.02 ± 0.004)

8.08
(0.32)

33°

7°

8.48
(0.334)

16.00
(0.630)

2.00
(0.079)

4.00
(0.157)

1.50
(0.059) DIA.

PART ORIENTATION IN TAPE

1.75
(0.07)

11.5
(0.45)

24.0
(0.94)

7.11
(0.28)

7.51
(0.296)

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Technical drawing of a tape reel showing dimensions in inches and millimeters. The drawing includes a side view on the left and a top view on the right. Key dimensions include:

- Side View (Left):**
 - Height: 5.19 (.204)
 - Flange Height: 6.85 (.270)
 - Flange Width: .36 (.014)
 - Total Width: 8.41 (.331)
- Top View (Right):**
 - Width: 4.00 (.157)
 - Hole Diameter: 0.76 (.030) R
 - Total Width: 9.51 (.374)
 - Flange Width: 7.95 (.374)
 - Hole Diameter: 0.95 (.037) R
 - Total Height: 16.0 (.630)
 - Flange Height: 6.85 (.270)
 - Bottom Right Dimension: 3.20 (.126)
- Label:** PART ORIENTATION IN TAPE (pointing to a feature on the top view)

[illegible]

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

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