




## Features

- 8 mm diameter, 6 mm long
- UL Recognized 
- Custom configurations available
- High surge current rating
- Stable breakdown throughout life
- RoHS compliant\* versions available

## Applications

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

# 2027 Series - 2-Pole Gas Discharge Tube

## Characteristics

Test Methods per ITU-T K.12, IEEE C62.31 and IEC 61643-311 GDT standards.

| Characteristic  | Model No.       |         |         |         |         |         |
|---|-----------------|---------|---------|---------|---------|---------|
|   | 2027-07         | 2027-09 | 2027-15 | 2027-20 | 2027-23 | 2027-25 |
| DC Sparkover $\pm 15\%$<br>( $\pm 20\%$ for Models 2027-07 & 2027-09) @ 100 V/s | 75 V            | 90 V    | 150 V   | 200 V   | 230 V   | 250 V   |
| Impulse Sparkover <sup>(1)</sup>  | 100 V/ $\mu$ s  | 300 V   | 300 V   | 350 V   | 400 V   | 475 V   |
|   | 1000 V/ $\mu$ s | 500 V   | 500 V   | 575 V   | 600 V   | 700 V   |

| Characteristic                    | Model No.       |         |         |         |         |         |
|-----------------------------------|-----------------|---------|---------|---------|---------|---------|
|                                   | 2027-30         | 2027-35 | 2027-40 | 2027-42 | 2027-47 | 2027-60 |
| DC Sparkover $\pm 15\%$ @ 100 V/s | 300 V           | 350 V   | 400 V   | 420 V   | 470 V   | 600 V   |
| Impulse Sparkover <sup>(1)</sup>  | 100 V/ $\mu$ s  | 550 V   | 600 V   | 650 V   | 675 V   | 725 V   |
|                                   | 1000 V/ $\mu$ s | 800 V   | 875 V   | 925 V   | 950 V   | 1100 V  |

<sup>(1)</sup> Impulse Sparkover voltage is defined as typical values of distribution.

|  |   |                     |
|--|---|---------------------|
| Insulation Resistance .....              | 100 V (50 V for Models 2027-07 and 2027-09) ..... | $> 10^{10} \Omega$  |
| Glow Voltage .....                       | 10 mA .....                                       | $\sim 70$ V         |
| Arc Voltage .....                        | $> 1$ A .....                                     | $\sim 10$ V         |
| Glow-Arc Transition Current .....        | .....   | $< 0.5$ A           |
| Capacitance .....                        | 1 MHz .....                                       | $< 1$ pF            |
| DC Holdover Voltage <sup>(2)</sup> ..... | 135 V, (52 V for Models 2027-07 and 2027-09,      |                     |
|  | 80 V for Model 2027-15) .....                     | $< 150$ ms          |
| Impulse Discharge Current .....          | 25000 A, 8/20 $\mu$ s <sup>(3)</sup> .....        | 1 operation minimum |
|  | 10000 A, 8/20 $\mu$ s .....                       | $> 10$ operations   |
|  | 2500 A, 10/350 $\mu$ s .....                      | 2 operations        |
|  | 500 A, 10/1000 $\mu$ s .....                      | $> 400$ operations  |
|  | 100 A, 10/1000 $\mu$ s or 10/700 $\mu$ s .....    | $> 1000$ operations |
| Alternating Discharge Current .....      | 65 Arms, 11 cycles <sup>(3)</sup> .....           | 1 operation minimum |
|  | 10 Arms, 1 s .....                                | $> 10$ operations   |
| Operating Temperature .....              | .....   | -55 to +125 °C      |
| Climatic Category (IEC 60068-1) .....    | .....   | 40/90/21            |
| Moisture Sensitivity Level .....         | .....   | 1                   |
| ESD Classification (HBM) .....           | .....   | 6                   |

### Notes:

- **UL recognized component, UL File E153537.**
- Model number marking on tube: 27-xxxV.
- Sparkover limits  $\pm 20\%$  after life, IR  $> 10^8 \Omega$  (-25 %, +30 % for Models 2027-07, 2027-09 and 2027-60).
- At delivery AQL 0.65 Level II, DIN ISO 2859.

<sup>(2)</sup> Network applied.

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

\*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.

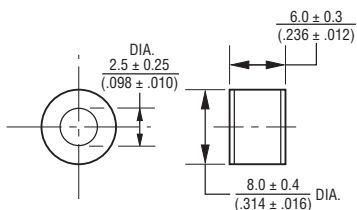
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# 2027 Series - 2-Pole Gas Discharge Tube

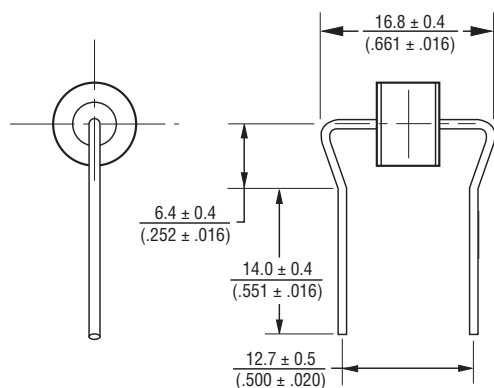
**BOURNS®**

## Product Dimensions

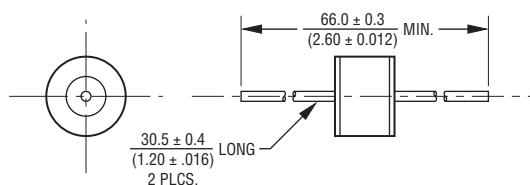
### 2027-XX-A



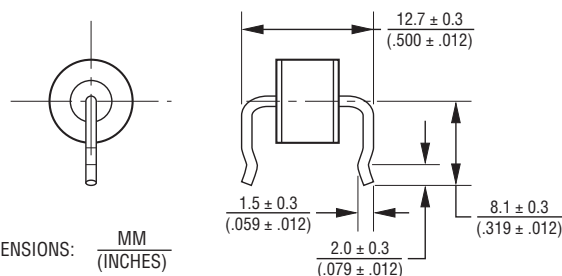
**2027-XX-B19** — 0.8 ± 0.04 mm (0.032 ± 0.002 in.) dia. lead wire  
(Not available in reelpack)



**2027-XX-B** — 0.8 ± .04 mm (0.032 ± 0.002 in.) dia. lead wire  
**2027-XX-C** — 1.0 ± .04 mm (0.039 ± 0.002 in.) dia. lead wire



**2027-XX-B10** — 0.8 ± .04 mm (0.032 ± 0.002 in.) dia. lead wire  
**2027-XX-C10** — 1.0 ± .04 mm (0.039 ± 0.002 in.) dia. lead wire  
(Not available in reelpack)



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

## How to Order

**2027 - xx - x nn T1 LF**

Model Number Designator

Voltage (Divided by 10)

|            |            |
|------------|------------|
| 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 |

Leads

- A = None
- B = 0.8 mm
- C = 1 mm

Lead Shape

(See Product Dimension Drawings)

Packaging

- Blank = Bulk Packaging (Standard)
- T1 = Reelpack (Optional - not available for Models 2027-xx-B19 and 2027-xx-B10/C10)

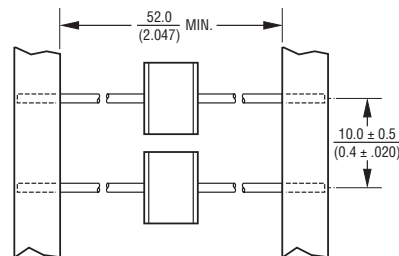
RoHS Compliant Option

- Blank = Standard Product
- LF = RoHS Compliant Product

## Packaging Specifications

| Model       | Standard Packaging Quantity |      |      |      |
|-------------|-----------------------------|------|------|------|
|             | Bulk (Bag)                  | Tray | Box  | Reel |
| 2027-XX-A   | 250                         |      | 1000 |      |
| 2027-XX-B   | 100                         |      | 500  |      |
| 2027-XX-C   | 100                         |      | 500  |      |
| 2027-XX-B10 |                             | 100  | 1000 |      |
| 2027-XX-C10 |                             | 100  | 1000 |      |
| 2027-XX-B19 | 100                         |      | 500  |      |
| 2027-XX-C19 | 100                         |      | 500  |      |
| 2027-XX-BT1 |                             |      |      | 1000 |
| 2027-XX-CT1 |                             |      |      | 1000 |

**2027-XX-BT1** — 0.8 ± 0.04 mm (0.032 ± 0.002 in.) dia. lead wire  
Reel is 14-inches in diameter and 2.75-inches wide.



REV. 04/18

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