




**THE DATASHEET OF**  
**2027-09-B**





## Features

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

## Additional Information

Click these links for more information:



# 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   | 450 V   | 475 V   |
| 1000 V/ $\mu$ s   | 500 V     | 500 V   | 575 V   | 600 V   | 675 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   | 850 V   |
| 1000 V/ $\mu$ s                   | 800 V     | 875 V   | 925 V   | 950 V   | 1000 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,<br>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       |
|  | 2000 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 and Storage Temperature .....  | .....   | -55 to +125 °C      |
| Climatic Category (IEC 60068-1).....     | .....   | 55/125/21           |
| Moisture Sensitivity Level.....          | .....   | 1                   |
| ESD Classification (HBM).....            | .....   | N/A                 |

### 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.



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

\*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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## Applications

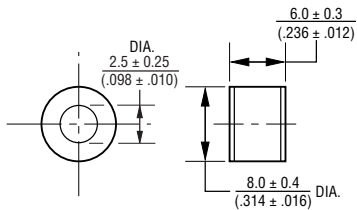
- Telecommunications
- Industrial electronics
- Commercial electronics
- Consumer electronics

# 2027 Series - 2-Pole Gas Discharge Tube

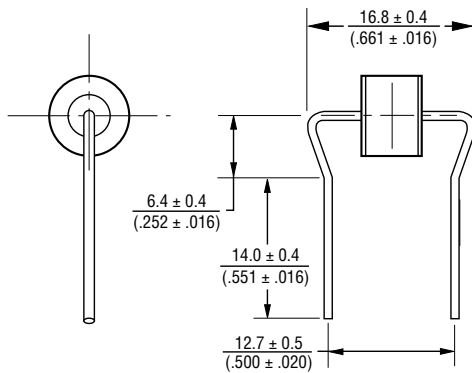
# BOURNS®

## Product Dimensions

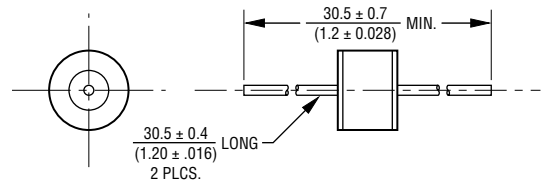
2027-XX-A



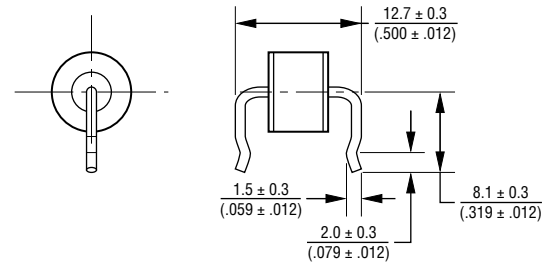
2027-XX-B19 —  $0.8 \pm 0.04$  mm ( $0.032 \pm 0.002$  in.) dia. lead wire  
(Not available in reelpack)



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



2027-XX-B10 —  $0.8 \pm .04$  mm ( $0.032 \pm 0.002$  in.) dia. lead wire  
2027-XX-C10 —  $1.0 \pm .04$  mm ( $0.039 \pm 0.002$  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)

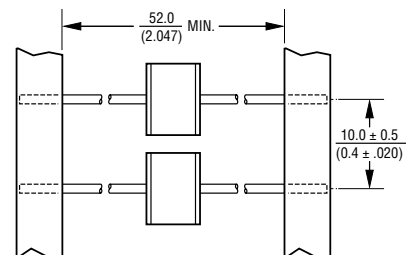
RoHS Compliant Option

- 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 —  $0.8 \pm 0.04$  mm ( $0.032 \pm 0.002$  in.) dia. lead wire  
Reel is 14-inches in diameter and 2.75-inches wide.



REV. B 12/20

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