



Features

- Size: 8 mm diameter, 10 mm length
- Balanced and symmetrical TRIGARD® design
- High surge current rating
- Stable breakdown throughout life
- Long life
- Fail-Short available
- RoHS compliant*

Applications

- Telecommunications electronics
- Industrial electronics
- Consumer electronics

2028 Series Long Life Heavy-Duty 3-Electrode Gas Discharge Tube

Characteristics

Test Methods per ITU-T (CCITT) K.12 Class 3 and IEC 61643-311.

Characteristic	Model No.			
	2028-23	2028-25	2028-35	2028-42
DC Sparkover $\pm 20\%$ @ 100 V/s	230 V	250 V	350 V	420 V
Impulse Sparkover 100 V/ μ s (Typical/99 %) 1000 V/ μ s (Typical/99 %)	< 450 V/550 V < 650 V/750 V	< 450 V/550 V < 650 V/750 V	< 700 V/800 V < 850 V/950 V	< 850 V/950 V < 1050 V/1150 V

Impulse Transverse Delay	1000 V/ μ s.....	< 75 ns
Insulation Resistance (IR)	100 V	> 1 G Ω
Capacitance.....	1 MHz	< 2 pF
Glow Voltage	10 mA.....	~ 70 V
Arc Voltage	1 A.....	~ 10 V
DC Holdover Voltage ¹	135 V	< 150 ms
Impulse Discharge Current ²	30,000 A, 8/20 μ s.....	1 operation
	20,000 A, 8/20 μ s.....	10 operations
	5,000 A, 10/350 μ s.....	1 operation
	200 A, 10/1000 μ s.....	300 operations
	20 A, 10/1000 μ s.....	1500 operations
Alternating Discharge Current	20 Arms, 1 second	10 operations
Operating Temperature.....		-55 to +85 °C
Climatic Category (IEC 60068-1).....		40 / 90 / 21

Notes:

- 1 Network applied.
 - 2 The Rated Impulse Discharge Current for TRIGARD® Gas Discharge Tubes is the total current equally divided between each line to ground.
- At delivery AQL 0.65 Level II, DIN ISO 2859.

Bulk Packaging Specifications

2028-xx-ALF	250 pcs. per tray
2028-xx-CLF	50 pcs. per tray
2028-xx-C2LF	100 pcs. per tray
2028-xx-C2FLF	100 pcs. per tray

How to Order

2028 - nn - x n F LF

Model Number _____

Designator _____

Voltage (Divided by 10) _____

23 = 230 V 35 = 350 V
25 = 250 V 42 = 420 V

Leads _____

A = No Leads /
Cassette Applications
C = 1.0 mm

Lead Shape _____

(See Product Dimension Drawings)

Fail-Short Option _____

Blank = Standard Product
F = With Fail-Short Mechanism

RoHS Compliance _____

LF = RoHS Compliant Product

BOURNS®

Asia-Pacific:

Tel: +886-2 2562-4117
Fax: +886-2 2562-4116

Europe:

Tel: +41-41 768 5555
Fax: +41-41 768 5510

The Americas:

Tel: +1-951 781-5500
Fax: +1-951 781-5700

www.bourns.com

*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.

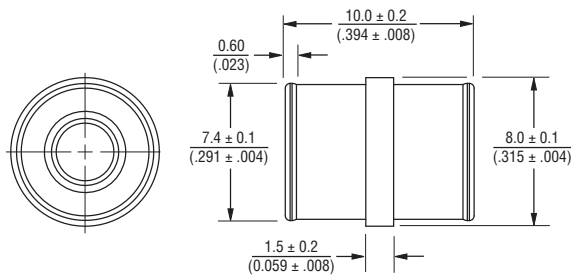
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

2028 Series Long Life Heavy-Duty 3-Electrode Gas Discharge Tube

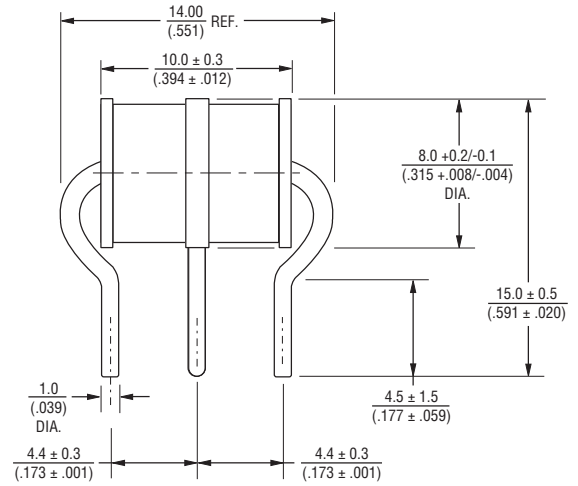
BOURNS®

Product Dimensions

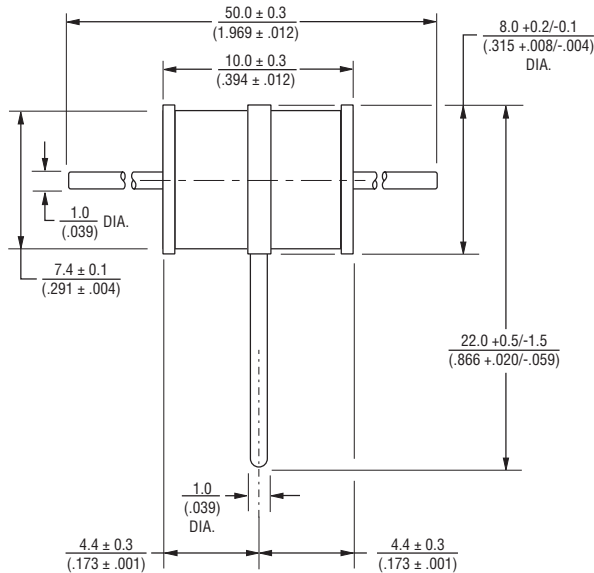
2028-xx-A



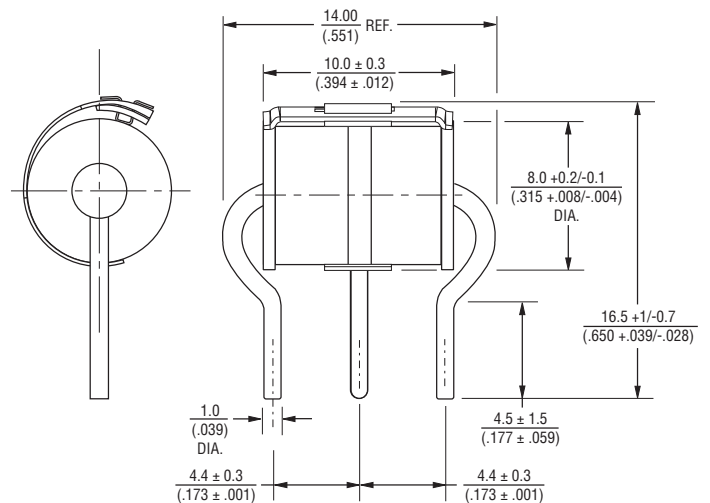
2028-xx-C2



2028-xx-C
1.0 mm dia. lead wire



2028-xx-C2F
WITH FAIL-SHORT OPTION



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

REV. B 06/13

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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Bourns:

[2028-23-CFLF](#) [2028-42-ALF](#) [2028-23-CLF](#) [2028-42-CFLF](#) [2028-23-C2LF](#) [2028-23-C2FLF](#) [2028-25-ALF](#) [2028-25-C2FLF](#) [2028-23-ALF](#) [2028-42-CLF](#) [2028-42-C2FLF](#) [2028-25-CLF](#) [2028-35-C2LF](#) [2028-35-CFLF](#) [2028-25-CFLF](#) [2028-35-CLF](#) [2028-35-C2FLF](#) [2028-35-ALF](#) [2028-25-C2LF](#) [2028-42-C2LF](#)