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## Features

- Size: 8 mm diameter, 10 mm length
- High current rating
- Low capacitance and insertion loss
- Fail-short option available
- RoHS compliant\*
-  UL Recognized

## Applications

- Telecommunications equipment
- Industrial equipment/electronics
- Consumer electronics

# 2046 Series Heavy-Duty 3-Electrode Gas Discharge Tube

## Characteristics

Test Methods per ITU-T K.12 and IEC 61643-311.

| Characteristic                    | Model No. |         |         |         |         |
|-----------------------------------|-----------|---------|---------|---------|---------|
|                                   | 2046-09   | 2046-14 | 2046-20 | 2046-23 | 2046-25 |
| DC Sparkover $\pm 20\%$ @ 100 V/s | 90 V      | 145 V   | 200 V   | 230 V   | 250 V   |
| Impulse Sparkover <sup>(1)</sup>  |           |         |         |         |         |
| 100 V/ $\mu$ s                    | < 600 V   | < 500 V | < 500 V | < 600 V | < 600 V |
| 1000 V/ $\mu$ s                   | < 700 V   | < 700 V | < 700 V | < 700 V | < 700 V |

| Characteristic                    | Model No. |         |         |          |          |
|-----------------------------------|-----------|---------|---------|----------|----------|
|                                   | 2046-35   | 2046-40 | 2046-42 | 2046-47  | 2046-60  |
| DC Sparkover $\pm 20\%$ @ 100 V/s | 350 V     | 400 V   | 420 V   | 470 V    | 600 V    |
| Impulse Sparkover <sup>(1)</sup>  |           |         |         |          |          |
| 100 V/ $\mu$ s                    | < 700 V   | < 800 V | < 800 V | < 900 V  | < 1000 V |
| 1000 V/ $\mu$ s                   | < 800 V   | < 900 V | < 900 V | < 1000 V | < 1100 V |

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

|   |                              |                 |
|---|------------------------------|-----------------|
| Insulation Resistance (IR) <sup>(2)</sup> ..... | 50 / 100 / 250 Vdc .....     | > 10 G $\Omega$ |
| Glow Voltage .....                              | 10 mA .....                  | ~ 70 V          |
| Arc Voltage .....                               | 1 A .....                    | ~ 10 V          |
| Glow-Arc Transition Current .....               | .....                        | < 1 A           |
| Maximum Capacitance .....                       | 1 MHz .....                  | < 2 pF          |
| Maximum Impulse Discharge Current .....         | 20,000 A, 8/20 $\mu$ s ..... | 1 operation     |
|   | 10,000 A, 8/20 $\mu$ s ..... | 10 operations   |
| Nominal Alternating Discharge Current .....     | 20 A, 50 Hz, 1 second .....  | 1 operation     |
| Impulse Life .....                              | 200 A 10/1000 $\mu$ s .....  | 130 operations  |
| DC Holdover Voltage <sup>(3)</sup> .....        | .....                        | < 150 ms        |
| Operating Temperature .....                     | .....                        | -30 to +85 °C   |
| Storage Temperature .....                       | .....                        | -40 to +115 °C  |
| Climatic Category (IEC 60068-1) .....           | .....                        | 40 / 90 / 21    |

### Notes:

- UL Recognized component, UL File E153537.
- At delivery AQL 0.65, level II DIN ISO 2859
- Line to Line voltage is approximately 1.8 to 2 times the stated Line to Ground voltage.
- Discharge current rating is total current equally divided between Each Line To Ground (ELTG).

|                                     |                      |
|-------------------------------------|----------------------|
| <sup>(2)</sup> DC Sparkover Voltage | IR Measuring Voltage |
| 90 V                                | 50 V                 |
| 145–400 V                           | 100 V                |
| 420–600 V                           | 250 V                |

|                                |                     |
|--------------------------------|---------------------|
| <sup>(3)</sup> Network Applied | DC Holdover Voltage |
| DC Sparkover Voltage           | 52 V                |
| 90–145 V                       | 135 V               |
| 200–250 V                      | 150 V               |
| 350–600 V                      |                     |

\*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.

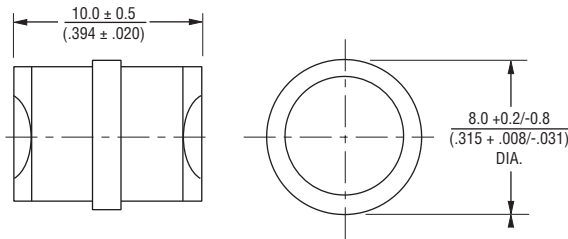
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# 2046 Series Heavy-Duty 3-Electrode Gas Discharge Tube

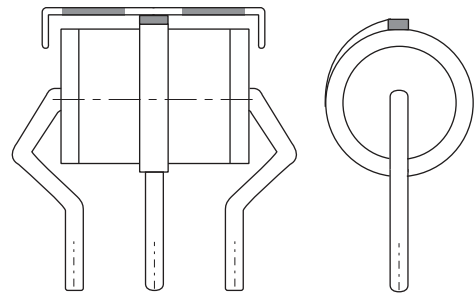
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## Product Dimensions

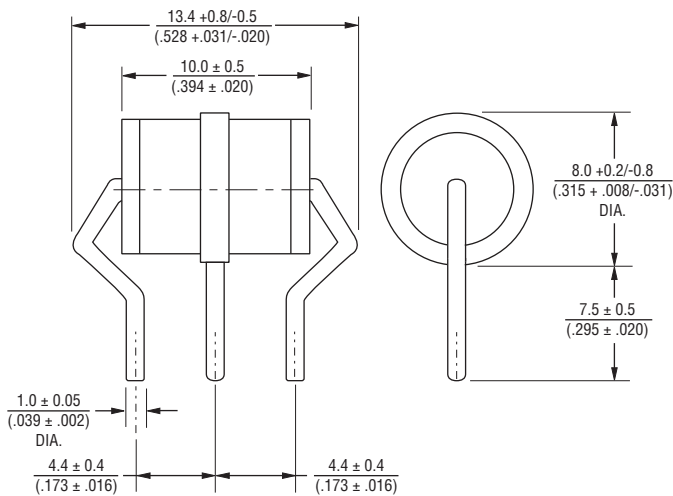
**2046-xx-A**



**2046-xx-C2F  
FAIL-SHORT CONFIGURATION**



**2046-xx-C2  
1.0 mm dia. lead wire**



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

## How to Order

**2046 - xx - xx (F) LF**

Model Number Designator

Voltage (Divided by 10)

|            |            |
|------------|------------|
| 09 = 90 V  | 35 = 350 V |
| 14 = 145 V | 40 = 400 V |
| 20 = 200 V | 42 = 420 V |
| 23 = 230 V | 47 = 470 V |
| 25 = 250 V | 60 = 600 V |

Leads

- A = No leads/Cassette Applications
- C2 = 1.0 mm dia., 4.4 mm spacing

Fail-Short Option

- (Blank) = None
- F = Fail-Short Device (Optional)

RoHS Compliance

- LF = RoHS Compliant Product

## Packaging Specifications

Model 2046 ships standard bulk pack, 100 pieces per tray; 5 trays per inner box; 2 inner boxes per outer pack (1K units).

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