



## Features

- Wide operating temperature range (-55 °C to +125 °C)
- Stable performance over temperature range
- Long life design
- Low capacitance
- Small size

- UL Recognized
- RoHS compliant\*

## Applications

- Outdoor communications equipment
- Equipment exposed to harsh environments

## 2036-xx-SM-H High Temperature Rated GDT Surge Protector

The Bourns® Model 2036 High Temperature Rated TRIGARD™ Series is a 3-electrode Gas Discharge Tube (GDT) Surge Protection device. The surface mount device provides robust performance and balanced protection in a small 5 mm diameter package. The Model 2036 High Temperature Series provides stable and long term performance over a wide temperature range, making it ideal for applications and equipment exposed to harsh environments.

### Additional Information

Click these links for more information:



### Characteristics

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

Characteristic	Model No.					
	2036-09	2036-15	2036-23	2036-35	2036-47	2036-60
DC Sparkover $\pm 25\%$ @ 100 V/s (1) (2)	90 V	150 V	230 V	350 V	470 V	600 V
Impulse Sparkover (3)	100 V/ $\mu$ s	350 V	450 V	600 V	750 V	850 V
	1000 V/ $\mu$ s	550 V	600 V	750 V	950 V	1100 V

Impulse Transverse Delay .....	1000 V/ $\mu$ s .....	< 75 ns
Nominal Insulation Resistance (IR) .....	100 V (50 V for Model 2036-09) .....	$10^{10} \Omega$ initially
Glow Voltage .....	10 mA .....	~ 70 V
Arc Voltage .....	1 A .....	~ 10 V
Glow-Arc Transition Current .....	.....	< 0.5 A
Capacitance .....	1 MHz .....	< 2 pF
DC Holdover Voltage (4) .....	>135 V, (52 V for Model 2036-09, 80 V for Model 2036-15) .....	< 150 ms
Nominal Impulse Discharge Current (5) .....	20000 A, 8/20 $\mu$ s (6) .....	1 operation
	10000 A, 8/20 $\mu$ s .....	10 operations
	200 A, 10/1000 $\mu$ s .....	300 operations
	2000 A, 10/350 $\mu$ s .....	1 operation
Alternating Discharge Current .....	20 Arms, 1 s <sup>2</sup> .....	1 operation
	10 Arms, 1 s .....	10 operations
Storage Temperature .....	.....	-55 to +125 °C
Operating Temperature .....	.....	-55 to +125 °C
Climatic Category (IEC 60068-1) .....	.....	55/125/21
Moisture Sensitivity Level .....	.....	1
ESD Classification (HBM) .....	.....	6

### Notes:

- (1) In ionized mode
  - (2) At delivery AQL 0.65 Level II, DIN ISO 2859
  - (3) Impulse sparkover value is defined as typical values of distribution
  - (4) Network applied per ITU K.12
  - (5) Total current through center electrode, half value each end electrode to center electrode
  - (6) DC Sparkover limit may exceed +25 %; GDT will continue to protect as designed
- Line to Line voltage is approximately 1.8 to 2 times the stated Line to Center electrode breakdown voltage values
  - Bourns recommends soldering surface mount devices per IPC/JEDEC J-STD-020 rev. D
  - Test methods per ITU-T K.12, IEEE C62.31 and IEC 61643-311 GDT standards
  - DC Sparkover limits after life  $\pm 25\%$  (-25 %, +30 % for Model 2036-09 and 2036-60), IR  $>10^8 \Omega$
  - UL Recognized component, UL File E153537



**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.

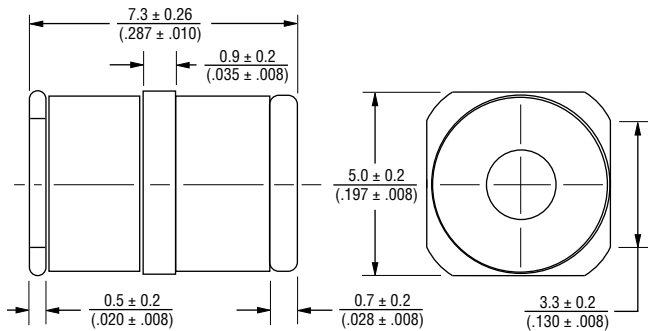
Users should verify actual device performance in their specific applications.

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# 2036-xx-SM-H High Temperature Rated GDT Surge Protector

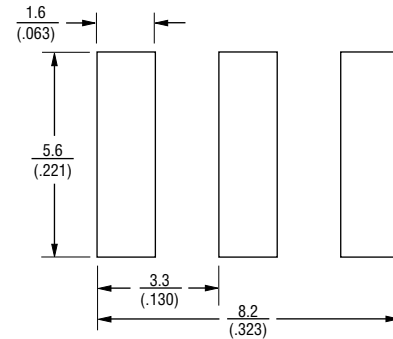


## Product Dimensions



DIMENSIONS: MILLIMETERS/(INCHES)

## Recommended Pad Layout



## How to Order

2036 - xx - SM - RP LF - H

Model Number Designator

Voltage (Divided by 10)

Surface Mount

Packaging Options\*

Blank = Bulk Packaging (Standard)

RP = Reelpack - 1000 pcs./reel (Optional)

RP2 = Reelpack - 1000 pcs./reel (Optional)

RoHS Compliancy

LF = RoHS Compliant Product

Suffix

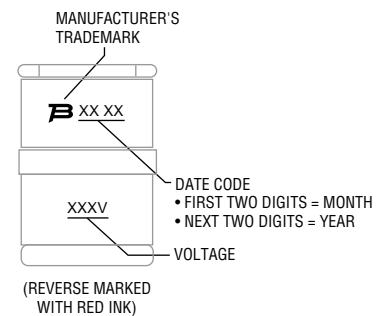
H = High Temperature Component

\* The optional -RP & -RP2 reelpacks contain 1000 pcs./reel.

The reels are 330 mm in diameter.

The -RP reelpack is 16 mm wide; the -RP2 reelpack is 24 mm wide.

## Typical Part Marking



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# 2036-xx-SM-H High Temperature Rated GDT Surge Protector

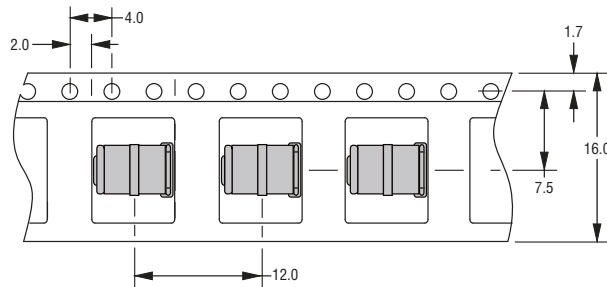
**BOURNS®**

## Packaging Specifications

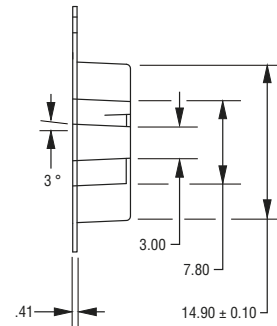
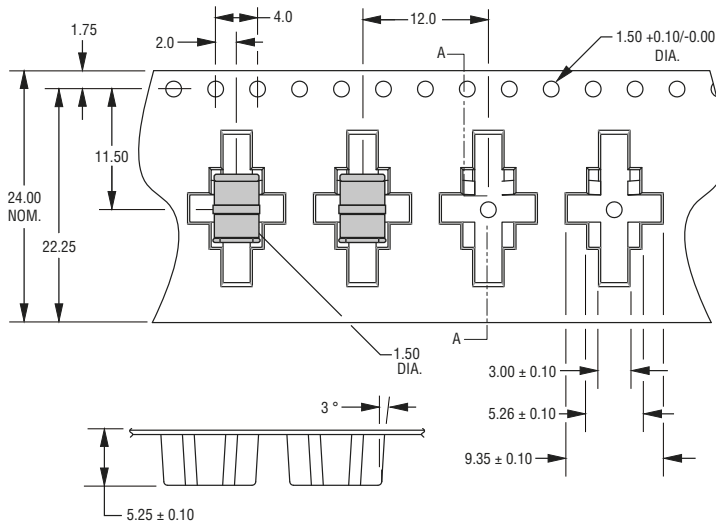
The Model 2036-xx-SM-H ships standard bulk pack, 250 pieces per bag, 4 bags per box.

The optional -RP & -RP2 reelpacks contain 1,000 pcs./reel. The reels are 330 mm in diameter. The -RP reelpack is 16 mm wide. The -RP2 reelpack is 24 mm wide.

### -RP



### -RP2



TOLERANCES: 0.13 UNLESS OTHERWISE NOTED

DIMENSIONS: MILLIMETERS

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