



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*



This series is currently available but not recommended for new designs. See [Product Obsolescence Memo](#) for recommended replacement products.

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.

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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/ μ s	250 V	350 V	450 V	600 V	750 V	850 V
1000 V/ μ s	550 V	500 V	600 V	750 V	950 V	1100 V

Impulse Transverse Delay	1000 V/ μ 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 μ s ⁽⁶⁾	1 operation
	10000 A, 8/20 μ s	10 operations
	200 A, 10/1000 μ s	300 operations
	2000 A, 10/350 μ s	1 operation
Alternating Discharge Current	20 Arms, 1 s ²	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 $\pm 25\%$; 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

*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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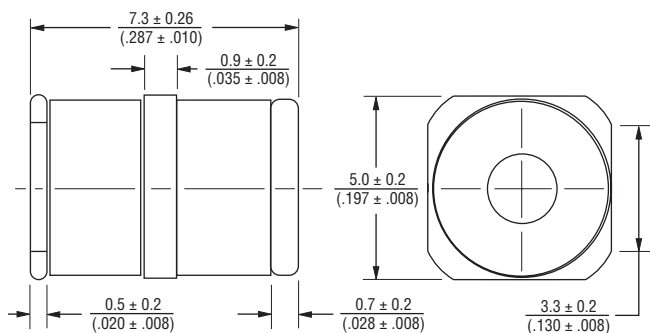
Applications

- Outdoor communications equipment
- Equipment exposed to harsh environments

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

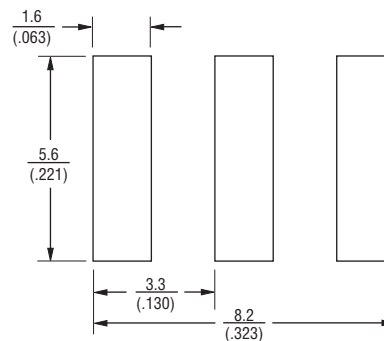
BOURNS®

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 Compliance

LF = RoHS Compliant Product

Suffix

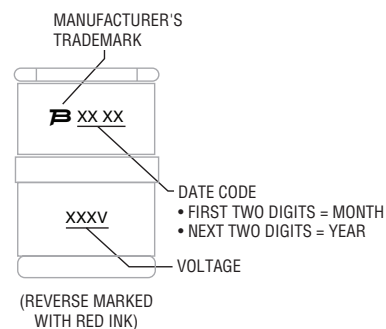
H = High Temperature Component

* 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

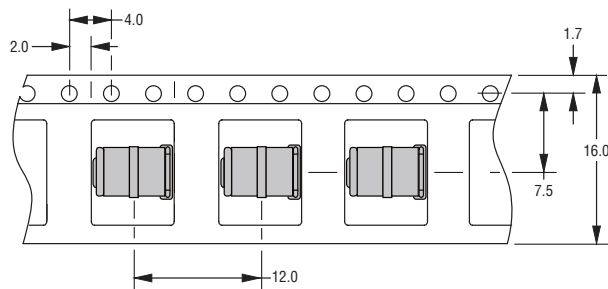
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Packaging Specifications

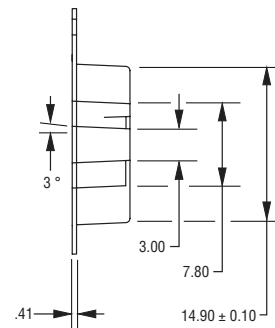
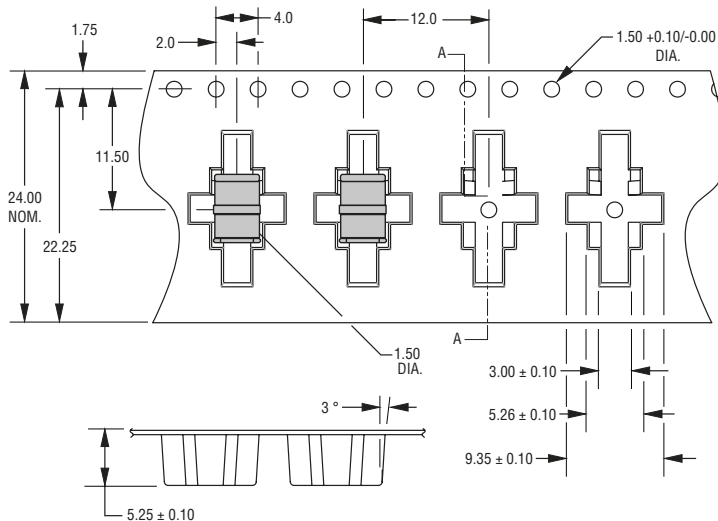
The Model 2036-xx-SM-H ships standard bulk pack, 250 pieces per bag, 4 bags per box.

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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REV. C 12/23

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