




## Features

- Balanced Mini-TRIGARD™ Series (5 mm diameter, 7.5 mm length)
- Ideal for board level protection of broadband circuits
- Leadless, surface mount for economical assembly
- High surge current rating, low insertion loss
- Stable breakdown throughout life
-  UL Recognized
- RoHS compliant\* version available

## 2036-xx-SM Precision Gas Discharge Tube Surge Protector

Bourns now offers a surface mount (SM) 3-electrode Gas Discharge Tube (GDT) surge protection device. The industry-leading quality and features of the Bourns® miniature 2036 TRIGARD™ series GDT continues in this new SM version for “pick and place” manufacturing techniques. The 2036 SM device is ideal for board level protection of high bandwidth applications such as xDSL, cable broadband and high speed Ethernet, due to its high energy handling capability, long and stable life performance and low capacitance of less than 2 pF. Bourns subminiature family of GDTs measure only 5 mm in diameter and are the smallest high performance GDTs in the telecom industry. Bourns® GDTs are designed to prevent damage from transient disturbances by acting as a “crowbar” in creating a short-to-ground circuit during conduction. When a voltage transient surge exceeds the defined breakdown voltage level of the GDT, the device becomes ionized and conduction takes place within a fraction of a microsecond. When the surge passes and system voltage returns to normal levels, the GDT returns to its high-impedance (off) state.

### Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31

Characteristic	Model No.					
	2036-07	2036-09	2036-15	2036-20	2036-23	2036-25
DC Sparkover ±20 % @ 100 V/s	75 V	90 V	150 V	200 V	230 V	250 V
Impulse Sparkover, 100 V/μs 1000 V/μs	250 V	250 V	350 V	425 V	450 V	475 V
	525 V	550 V	500 V	575 V	600 V	625 V

Characteristic	Model No.					
	2036-30	2036-35	2036-40	2036-42	2036-47	2036-60
DC Sparkover ±20 % @ 100 V/s	300 V	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover, 100 V/μs 1000 V/μs	500 V	600 V	650 V	675 V	750 V	850 V
	650 V	750 V	825 V	850 V	950 V	1100 V

Impulse Transverse Delay .....	100 V/μs .....	< 75 ns
Insulation Resistance (IR) .....	100 V (50 V for Model 2036-07 & 2036-09) .....	> 10 <sup>10</sup> Ω
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 <sup>1</sup> .....	>135 V, (52 V for Model 2036-07, & -09, .....	< 150 ms
Impulse Discharge Current .....	20000 A, 8/20 μs <sup>2</sup> .....	1 operation minimum
	10000 A, 8/20 μs .....	> 10 operations
	200 A, 10/1000 μs .....	> 300 operations
	200 A, 10/700 μs .....	> 500 operations
Alternating Discharge Current .....	20 Arms, 1 s <sup>2</sup> .....	1 operation minimum
	10 Arms, 1 s .....	> 10 operations
Operating Temperature .....		- 55 to +85 °C

### Notes:

UL Recognized component, UL File E153537

The rated discharge current for Mini-TRIGARD™ GDTs is the total current equally divided between each line to ground.

Sparkover limits after life ±25 % (-25 %, +30 % for Model 2036-07, 2036-09 and 2036-60), IR >10<sup>8</sup> Ω .

Operating characteristics per RUS PE-80 and Telcordia GR 1361 available on request.

<sup>1</sup> Network applied.

<sup>2</sup> DC Sparkover may exceed ±25 % but will continue to protect without venting.

\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.

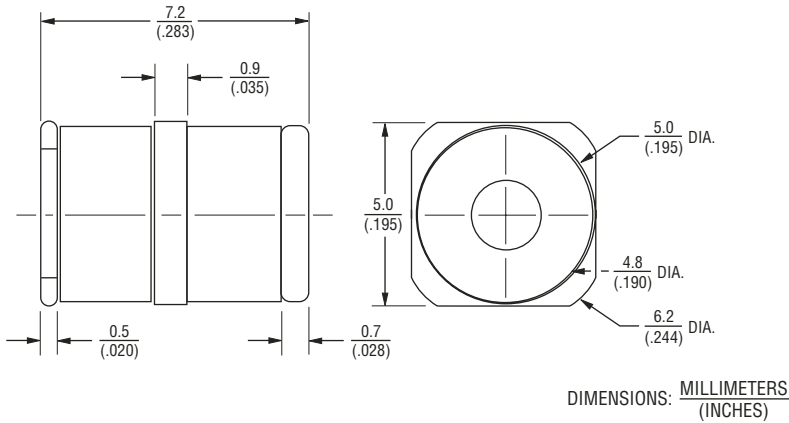
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

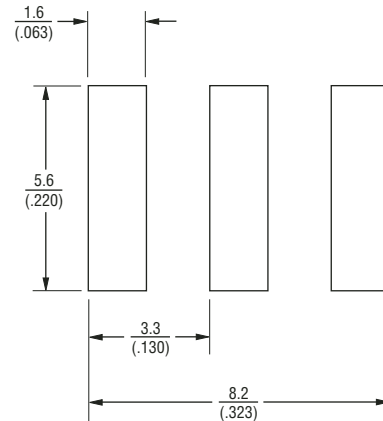
# 2036-xx-SM Precision Gas Discharge Tube Surge Protector

**BOURNS®**

## Product Dimensions



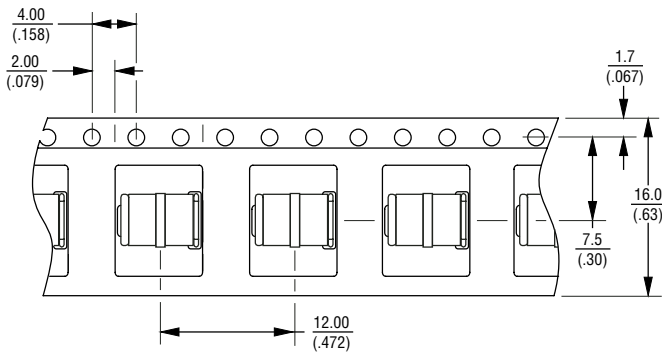
## Recommended Pad Layout



## Packaging Specifications

The Model 2036-xx-SM ships standard bulk pack, 100 pieces per bag.

The optional reelpack (-RP) contains 1,000 pieces per reel. Reel is 13 " in diameter and 3/4 " wide.



## How To Order

2036 - xx - SM - RP LF

Model Number Designator

Voltage (divided by 10)

Surface Mount

Packaging Options

Blank = Bulk Packaging (Standard)  
RP = Reelpack (Optional)

Lead Free Option

Blank = Standard Product  
LF = Lead Free / RoHS Compliant Product



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