

# Features

- Leadless, surface mount for economical assembly
- Compact mini-size
- High surge current rating
- Low capacitance and insertion loss
- Stable breakdown throughout life

# 2035-xx-SM Precision Gas Discharge Tube Surge Protector

Bourns now offers a surface mount (SM) 2-electrode GDT surge protection device. The industry-leading quality and features of the Bourns<sup>®</sup> miniature 2035 Series GDT continue in this new SM version. Compatible with "pick and place" assembly systems, the SM is ideal for high-density applications such as PCBs for telecommunications, commercial and industrial applications.

## Characteristics

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

Characteristic	Model No.					
	2035-09	2035-15	2035-20	2035-23	2035-25	2035-30
DC Sparkover ±15 % (±20 % for Model 2035-09) @ 100 V/s	90 V	150 V	200 V	230 V	250 V	300V
Impulse Sparkover <sup>(1)</sup> 100 V/µs 1000 V/µs	350 V 525 V	400 V 550 V	425 V 575 V	450 V 600 V	475 V 625 V	525 V 650 V

Characteristic	Model No.				
	2035-35	2035-40	2035-42	2035-47	2035-60
DC Sparkover ±15 % @ 100 V/s	350 V	400 V	420 V	470 V	600 V
(-12 %, +15 % for Model 2035-60) @ 100 V/s	350 V				
Impulse Sparkover (1)					
100 V/µs	600 V	650 V	675 V	750 V	950 V
1000 V/µs	750 V	800 V	850 V	950 V	1100 V

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

Insulation Resistance (IR)	100 V (50 V for Model 2035-09)	>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	<1 pF
	>135 V, (52 V for Model 2035-09,	
5	80 V for Model 2035-15)	
Impulse Discharge Current	10000 A, 8/20 µs <sup>(3)</sup>	1 operation minimum
	5000 A, 8/20 μs	>10 operations
	1000 A, 10/350 μs	1 operation
	100 A, 10/1000 μs	
	100 A, 10/700 µs	
Alternating Discharge Current	20 Arms, 11 cycles (3)	1 operation minimum
	5 Arms, 1 s	>10 operations
Climatic Category (IEC 60068-1)		40/90/21

Notes:

UL Recognized component, UL File E153537

 Surface Mount (SM) parts may show a temporary increase in DCBD after the solder reflow process. Most devices will recover within 24 hours time. It should be noted that there is no quality defect nor change in protection levels during the temporary change in DCBD.

• Sparkover limits after life ±20 % (-25 %, +30 % for Model 2035-09, 2035-60), IR >108.

• At delivery AQL 0.65 Level II, DIN ISO 2859.

• Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev D.

<sup>(2)</sup> Network applied.

<sup>(3)</sup> Tube may exceed ±20 % but will continue to protect without venting.

\*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.

Sum UL Recognized
RoHS compliant\* version available

# 2035-xx-SM Precision Gas Discharge Tube Surge Protector

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## **Recommended Pad Layout**





#### How to Order

	2035 - xx - SM - RP LF
Model Number Designator	
Voltage	
Surface Mount	
Packaging Options Blank = Bulk Packaging (Standard) RP = Reelpack (Optional) RP3 = Reelpack (Optional) RP4 = Reelpack (Optional)	
RoHS Compliant Option Blank = Standard Product LF = RoHS Compliant Product	

## **Packaging Specifications**

	Standard Packaging Quantity				
Model	Bulk(Bag)	Tray	Box	Reel	
2035-SM	250		1000		
2035-SM-RP				1500	
2035-SM-RP3				1000	
2035-SM-RP4				1000	

## -RP

Reel is 13 inches in diameter and 3/4 inch wide.



#### -RP3

#### Reel is 13 inches in diameter and 11/16 inch wide.



#### -RP4

Reel is 13 inches in diameter and 11/16 inch wide. RP4 features the GDTs placed upside-down inside the carrier tape.



Unless otherwise specified, tolerances in decimals are .X  $\pm$  0.3, .XX  $\pm$  0.15 for lengths in millimeters and  $\pm$ 1 ° for degrees.

#### REV. O 08/15

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