



## Features

- Size: 6.2 mm diameter, 4.2 mm length
- Surface mount device
- High voltage range
- Compact size
- High insulation resistance
- RoHS compliant\*
- UL Recognized (NOTE 1)

## Applications

- Telecommunications equipment
- Industrial equipment/electronics
- Consumer electronics

# 2093 Series High Voltage 2-Electrode Gas Discharge Tube

### Characteristics

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

Characteristic	Model No.		
	2093-100	2093-120	2093-180
DC Sparkover ± 20 % @ 100 V/s	1000 V	1200 V	1800 V
Impulse Sparkover (NOTE 3)			
100 V/μs	< 1500 V	< 1700 V	< 2500 V
1000 V/μs	< 1600 V	< 1800 V	< 2600 V

Characteristic	Model No.			
	2093-200	2093-250	2093-270	2093-300
DC Sparkover ± 20 % @ 100 V/s	2000 V	2500 V	2700 V	3000 V
Impulse Sparkover (NOTE 3)				
100 V/μs	< 2700 V	< 3100 V	< 3300 V	< 3600 V
1000 V/μs	< 2800 V	< 3200 V	< 3400 V	< 3700 V

### Additional Information

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Insulation Resistance (IR) (NOTE 4).....	500/1000 Vdc .....	> 1 GΩ
Glow Voltage .....	10 mA .....	~ 60 V
Arc Voltage .....	1 A .....	~ 15 V
Glow-Arc Transition Current .....		< 1 A
Capacitance.....	1 MHz .....	< 0.8 pF
Impulse Discharge Current.....	5000 A, 8/20 μs .....	1 operation
	3000 A, 8/20 μs .....	10 operations
Alternating Discharge Current .....	3 Arms, 50 Hz, 1 sec .....	1 operation
	10 Arms, 50 Hz, 9 cycles.....	1 operation
Impulse Life .....	100 A, 10/1000 μs .....	> 300 operations
AC Withstand Voltage (Model 2093-180) .....		900 Vrms, 3 seconds
Operating Temperature.....		-40 to +85 °C (NOTE 1)
Storage Temperature.....		-40 to +115 °C
Climatic Category (IEC 60068-1).....		40 / 105 / 21

#### Notes:

- (1) UL File No. E313168 certifies the Model 2093 Series up to the maximum operating temperature of +85 °C. Bourns' internal testing and reliability data validates an operating temperature rating up to +105 °C for this series, but this higher rating is not UL recognized so we have retained the maximum operating temperature of +85 °C in this data sheet.
- (2) At delivery AQL 0.65 Level II, DIN ISO 2859.
- (3) Impulse Sparkover voltage is defined as typical values of distribution.
- (4) Insulation Resistance measured at 1000 V for GDTs with > 2000 V DCBD.
- (5) Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev D.



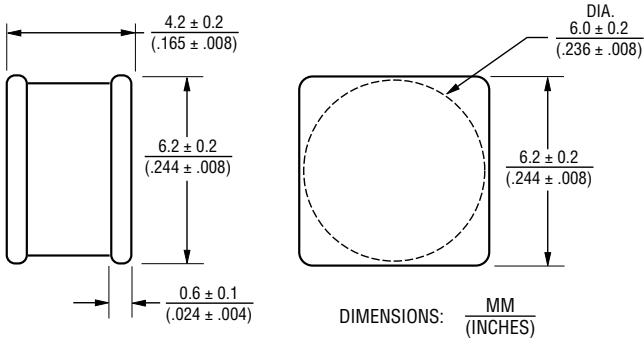
**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*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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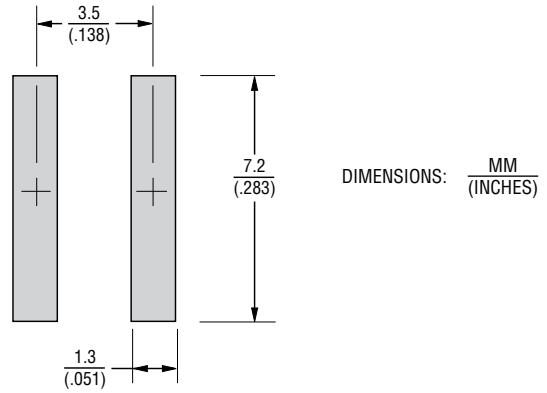
# 2093 Series High Voltage 2-Electrode Gas Discharge Tube

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## Product Dimensions

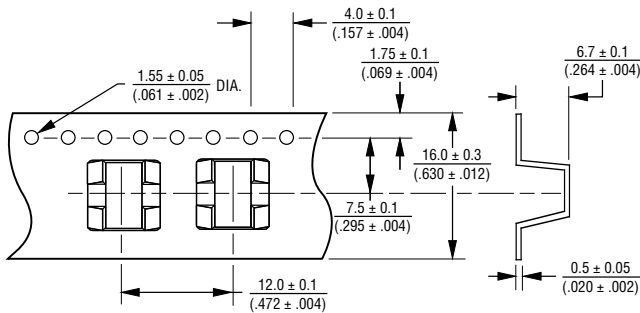


## Recommended Pad Layout

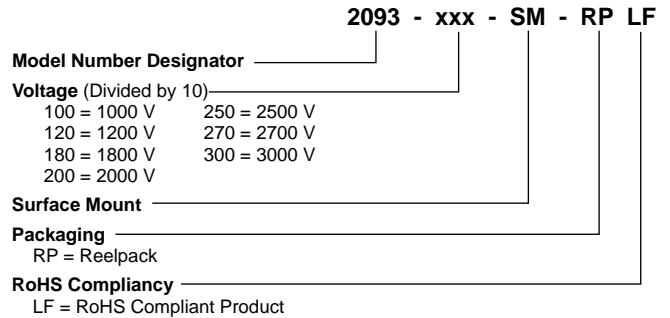


## Packaging Specifications

The Model 2093-xx-SM ships standard reelpack (-RP), 800 pieces per reel, 2,400 pieces per box. Reel is 330 mm in diameter and 16 mm wide.



## How to Order



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Users should verify actual device performance in their specific applications.

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