

# ANTREX Electronics

## Electronic Components Sourcing Information

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### Product Reference Information

|                      |                                 |
|----------------------|---------------------------------|
| <b>Part Number:</b>  | 2093-180-SM-RPLF                |
| <b>Manufacturer:</b> | Bourns Inc.                     |
| <b>Package:</b>      | Tape & Reel (TR), Cut Tape (CT) |
| <b>Availability:</b> | Please confirm with sales       |

#### Product Page:

<https://antrexco.com/product/details/bourns-inc/2093-180-sm-rplf.html>

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### Contact Information

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### Quality & Trust

New & Original Components

Supplier verification and packaging condition review

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Secure sourcing support for OEM / EMS projects

#### Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



## 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 $\pm 20\%$ @ 100 V/s | 1000 V    | 1200 V   | 1800 V   |
| Impulse Sparkover (NOTE 3)        |           |          |          |
| 100 V/ $\mu$ s                    | < 1500 V  | < 1700 V | < 2500 V |
| 1000 V/ $\mu$ s                   | < 1600 V  | < 1800 V | < 2600 V |

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

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|                                       |                          |                        |
|---------------------------------------|--------------------------|------------------------|
| Insulation Resistance (IR) (NOTE 4)   | 500/1000 Vdc             | > 1 G $\Omega$         |
| 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 $\mu$ s     | 1 operation            |
|                                       | 3000 A, 8/20 $\mu$ s     | 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 $\mu$ s   | > 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.

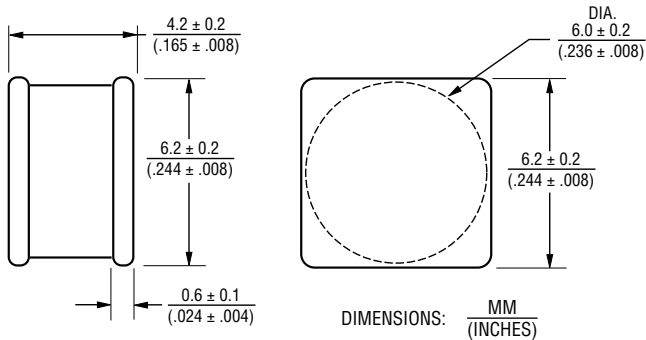
Users should verify actual device performance in their specific applications.

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

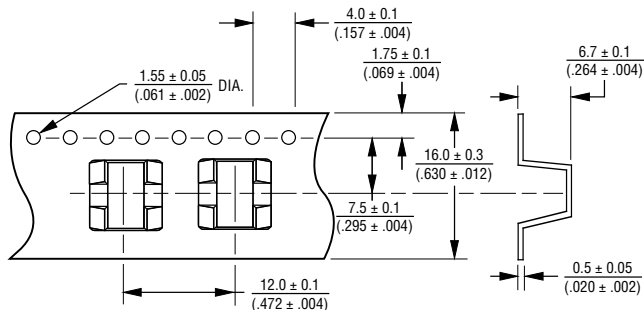
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### Product Dimensions

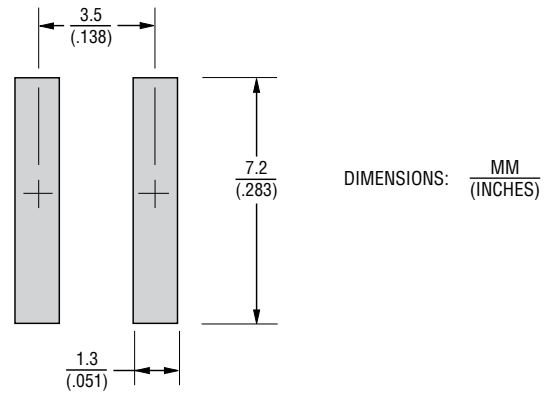


### Packaging Specifications

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.



### Recommended Pad Layout



### How to Order

**2093 - xxx - SM - RP LF**

**Model Number Designator** \_\_\_\_\_

**Voltage** (Divided by 10) \_\_\_\_\_

100 = 1000 V      250 = 2500 V

120 = 1200 V      270 = 2700 V

180 = 1800 V      300 = 3000 V

200 = 2000 V

**Surface Mount** \_\_\_\_\_

**Packaging** \_\_\_\_\_

RP = Reelpack

**RoHS Compliance** \_\_\_\_\_

LF = RoHS Compliant Product

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