




## Features

- Fast acting
- Small size
- Stable breakdown throughout life
- Designed to operate with TBU® devices
- RoHS compliant\* versions available
-  UL Recognized

## Additional Information

Click these links for more information:



# 2031-xxT-SM Series - Miniature 2-Pole Gas Discharge Tube

## Characteristics

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

Characteristic	Model No.		
	2031-15T	2031-23T	2031-42T
Initial DC Sparkover (100 V/s) Typical	150 V	230 V	420 V
Minimum DC Sparkover (100 V/s) Throughout Service Life	60 V	185 V	360 V
Maximum Impulse Sparkover <sup>(1)</sup> (5k V 1.2/50 μs) Throughout Service Life	500 V	650 V	850 V

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

Insulation Resistance (IR) .....	50 / 100 V .....	> 10 <sup>9</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
DC Holdover Voltage (Network Applied per ITU-T K.12)		
2031-15T .....	52 V .....	< 150 ms
2031-23T .....	80 V .....	< 150 ms
2031-42T .....	135 V .....	< 150 ms
Service Life .....	8/20 μs, 1 kA .....	2 operations
	10/1000 μs, 1 kV, 100 A .....	50 operations
	2/10 μs, 5 kV, 500 A .....	20 operations
	10/700 μs, 6 kV, 150 A .....	10 operations
	8/20 μs 250 A, 1.2/50 μs, 500 V (IEC 61643-21) .....	150 operations
	600 V rms, 1 A, 0.2 s .....	5 operations
Operating and Storage Temperature, Climatic Category (IEC 60068-1) 40 / 90 / 21 .....		-40 °C to +90 °C
Moisture Sensitivity Level .....		1
ESD Classification (HBM) .....		N/A

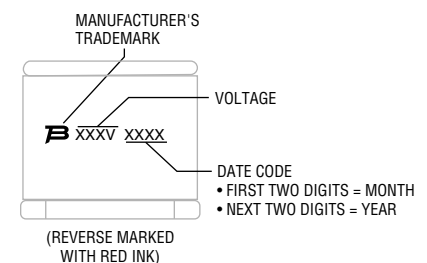
### Notes:

- **UL Recognized component, UL File E153537.**
- Surge polarity should be reversed between consecutive surges (+--+).
- At delivery AQL 0.65 Level II, DIN ISO 2859.
- Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev D.

## Applications

Port Protection	GDT Device P/N	TBU® Device P/N
CanBus	2031-23T-SM-RPLF	TBU-CA065-100-WH
RS232	2031-23T-SM-RPLF	TBU-CA065-200-WH
RS422	2031-23T-SM-RPLF	TBU-CA065-200-WH
RS485	2031-23T-SM-RPLF	TBU-CA065-200-WH
RS485	2031-42T-SM-RPLF	TBU-CA085-200-WH
SDI	2031-23T-SM-RPLF	TBU-CA065-100-WH
VDSL	2031-15T-SM-RPLF	TBU-CA050-500-WH

## Typical Part Marking



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

"TBU" is a registered trademark of Bourns, Inc. in the U.S. and other countries, except Japan.  
 All references to TBU® in this document for use in Japan shall be deemed to be replaced with Bourns® TBU™.  
 \*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.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at [www.bourns.com/docs/legal/disclaimer.pdf](http://www.bourns.com/docs/legal/disclaimer.pdf).

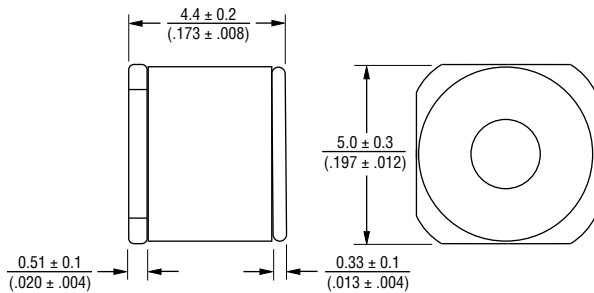
## Applications

- Telecommunications
- Industrial electronics
- Avionics

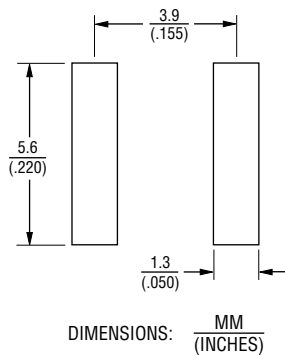
## 2031-xxT-SM Series - Miniature 2-Pole Gas Discharge Tube

**BOURNS®**

### Product Dimensions



### Recommended Pad Layout



### How to Order

2031 - xxT - SM - RP LF

Model Number Designator

Voltage (Divided by 10)

15 = 150 V

23 = 230 V

42 = 420 V

Surface Mount

Packaging Options

Blank = Bulk Packaging - 250 pcs./bag (Standard)

RP = Reelpack - 1,500 pcs./reel (Optional)

RP3 = Reelpack - 1,000 pcs./reel (Optional)

RoHS Compliant Option

Blank = Standard Product

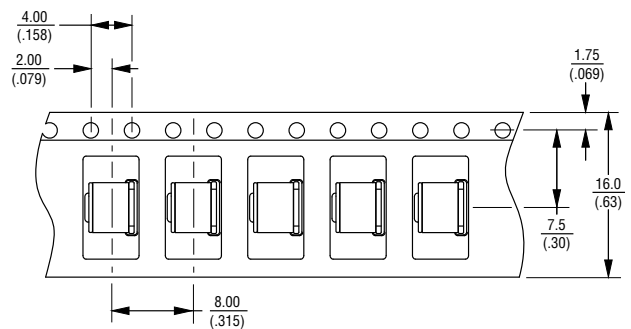
LF = RoHS Compliant Product

### Packaging Specifications

Model	Standard Packaging Quantity			
	Bulk (Bag)	Tray	Box	Reel
2031-xxT-SM	250		1000	
2031-xxT-SM-RP				1500
2031-xxT-SM-RP3				1000

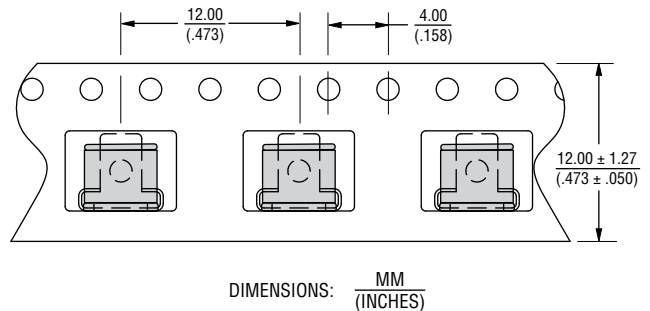
#### -RP

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



#### -RP3

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



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

**BOURNS®**

Asia-Pacific: Tel: +886-2 2562-4117 • Email: [asiacus@bourns.com](mailto:asiacus@bourns.com)

EMEA: Tel: +36 88 885 877 • Email: [eurocus@bourns.com](mailto:eurocus@bourns.com)

The Americas: Tel: +1-951 781-5500 • Email: [americus@bourns.com](mailto:americus@bourns.com)

[www.bourns.com](http://www.bourns.com)

REV. J – 09/19

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at [www.bourns.com/docs/legal/disclaimer.pdf](http://www.bourns.com/docs/legal/disclaimer.pdf).