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

Applications
- Telecommunications
- Industrial electronics
- Avionics

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

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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>2031-15T</th>
<th>2031-23T</th>
<th>2031-42T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum DC Sparkover (100 V/s) Throughout Service Life</td>
<td>60 V</td>
<td>185 V</td>
<td>360 V</td>
</tr>
<tr>
<td>Maximum Impulse Sparkover (1) (5k V 1.2/50 μs) Throughout Service Life</td>
<td>500 V</td>
<td>650 V</td>
<td>850 V</td>
</tr>
</tbody>
</table>

(1) Impulse Sparkover voltage is defined as typical values of distribution.

Insulation Resistance (IR) .................................. 50 / 100 V .......................................................... > 10^9 Ω
Glow Voltage .................................................. 10 mA ................................................................. 70 V
Arc Voltage ..................................................... >1 A ................................................................. 10 V
Glow-Arc Transition Current ................................ 1 MHz .............................................................. < 0.5 A
Capacitance ..................................................... < 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 6068-1) 40 / 90 / 21 .............................................................. -40 °C to +90 °C

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

<table>
<thead>
<tr>
<th>Port Protection</th>
<th>GDT Device P/N</th>
<th>TBU® Device P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>CanBus</td>
<td>2031-23T-SM-RPLF</td>
<td>TBU-CA065-100-WH</td>
</tr>
<tr>
<td>RS232</td>
<td>2031-23T-SM-RPLF</td>
<td>TBU-CA065-200-WH</td>
</tr>
<tr>
<td>RS422</td>
<td>2031-23T-SM-RPLF</td>
<td>TBU-CA065-200-WH</td>
</tr>
<tr>
<td>RS485</td>
<td>2031-23T-SM-RPLF</td>
<td>TBU-CA065-200-WH</td>
</tr>
<tr>
<td>RS485</td>
<td>2031-42T-SM-RPLF</td>
<td>TBU-CA085-200-WH</td>
</tr>
<tr>
<td>SDI</td>
<td>2031-23T-SM-RPLF</td>
<td>TBU-CA065-100-WH</td>
</tr>
<tr>
<td>VDSL</td>
<td>2031-15T-SM-RPLF</td>
<td>TBU-CA050-500-WH</td>
</tr>
</tbody>
</table>

*TBU* is a registered trademark of Bourns, Inc. in the U.S., Taiwan and European Community.
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.
2031-xxT-SM Series - Miniature 2-Pole Gas Discharge Tube

Product Dimensions

<table>
<thead>
<tr>
<th>DIMENSIONS: MM (INCHES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4 ± 0.2 (.173 ± .008)</td>
</tr>
<tr>
<td>5.0 ± 0.3 (.197 ± .012)</td>
</tr>
<tr>
<td>0.51 ± 0.1 (.020 ± .004)</td>
</tr>
<tr>
<td>0.33 ± 0.1 (.013 ± .004)</td>
</tr>
</tbody>
</table>

Recommended Pad Layout

<table>
<thead>
<tr>
<th>DIMENSIONS: MM (INCHES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9 (.155)</td>
</tr>
<tr>
<td>5.5 (215)</td>
</tr>
<tr>
<td>1.3 (030)</td>
</tr>
</tbody>
</table>

How to Order

2031-xxT-SM RP LF

Model Number Designator

Voltage

15 = 60 V
23 = 185 V
42 = 360 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

<table>
<thead>
<tr>
<th>Model</th>
<th>Bulk (Bag)</th>
<th>Tray</th>
<th>Box</th>
<th>Reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2031-xxT-SM</td>
<td>250</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2031-xxT-SM-RP</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2031-xxT-SM-RP3</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

-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.

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