**2020 T-Series - Fast Acting 3-Electrode Miniature GDT**

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

**Applications**
- Telecommunications
- Industrial electronics
- Avionics

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**Characteristics**

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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2020-15T</td>
</tr>
<tr>
<td>Minimum DC Sparkover (100 V/s)</td>
<td></td>
</tr>
<tr>
<td>Throughout Service Life</td>
<td>60 V</td>
</tr>
<tr>
<td>Maximum Impulse Sparkover (1 kV/µs)</td>
<td>500 V</td>
</tr>
<tr>
<td>Throughout Service Life</td>
<td></td>
</tr>
</tbody>
</table>

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

- Impulse Transverse Delay ........................................ 1000 V/µs ............................................... < 75 ns
- Insulation Resistance (IR) ...................................... 50 V / 100 V............................................. > 10³ Ω
- Glow Voltage ..................................................... 10 mA.................................................... < 70 V
- Arc Voltage ........................................................ > 1 A....................................................... < 10 V
- Glow-Arc Transition Current .................................... 10 mA.................................................... < 0.5 A
- Capacitance........................................................ 1 MHz....................................................... < 2 pF

<table>
<thead>
<tr>
<th>DC Holdover Voltage (Network Applied per ITU-T K.12)</th>
<th>2020-15T</th>
<th>2020-23T</th>
<th>2020-42T</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020-15T</td>
<td>52 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020-23T</td>
<td>80 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020-42T</td>
<td>135 V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Service Life (2).................................................. 8/20 µs, 10 kA........................................ 1 operation
- 10/1000 µs, 1 kV, 200 A........................................ 100 operations (3)
- 2/10 µs, 6 kV, 2000 A........................................ 10 operations (4)
- 10/700 µs, 6 kV, 300 A........................................ 50 operations (3)
- 8/20 µs, 500 A, 1.2/50 µs, 500 V........................ 150 operations (3)
- 600 V, 10 Arms, 0.2 sec...................................... 10 operations (4)
- 600 Vrms, 0.5 A - 60 A...................................... Fail-Short activates (5)
- 230 Vrms, 0.5 A-25 A........................................ Fail-Short activates (4)

- Operating Temperature Range ................................... -40 °C to +90 °C
- Storage Temperature Range ...................................... -55 °C to +90 °C

*Notes:
- (1) Surge polarity should be reversed between consecutive surges (+,-,+-)
- (2) Surge polarity should be reversed between consecutive surges (+,-,+-)
- (3) Applies only to GDT with optional Fail-Short. GDT operates and will survive with Fail-Short activation.
- (4) At delivery AQL 0.65 Level II, DIN ISO 2859.
- (5) All models are RoHS compliant versions.

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**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>2020-23T</td>
<td>TBU-CA065-100-WH</td>
</tr>
<tr>
<td>RS232</td>
<td>2020-23T</td>
<td>TBU-CA065-200-WH</td>
</tr>
<tr>
<td>RS422</td>
<td>2020-23T</td>
<td>TBU-CA065-200-WH</td>
</tr>
<tr>
<td>RS485</td>
<td>2020-23T</td>
<td>TBU-CA065-200-WH</td>
</tr>
<tr>
<td>RS485</td>
<td>2020-42T</td>
<td>TBU-CA085-200-WH</td>
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<tr>
<td>SDI</td>
<td>2020-23T</td>
<td>TBU-CA065-100-WH</td>
</tr>
<tr>
<td>VDSL</td>
<td>2020-15T</td>
<td>TBU-CA050-500-WH</td>
</tr>
</tbody>
</table>

*TBU* is a registered trademark of Bourns, Inc. in the United States and other countries.


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.
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How to Order

Model Number
Designator
Voltage
15 = 60 V
23 = 180 V
42 = 360 V
Leads
A = None/Cassette Applications
C = 1 mm Dia. Leads/Through-hole
Lead Shape
(See Product Dimension Drawings)
Fail-Short Option
Blank = Standard Product
F = With Fail-Short Mechanism
RoHS Compliant Option
Blank = Standard Product
LF = RoHS Compliant Product

Model 2020-xxT ships in standard bulk pack, 100 pcs./tray.

Packaging Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Standard Packaging Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bulk (Bag)</td>
</tr>
<tr>
<td>2020-xxT-A1</td>
<td>250</td>
</tr>
<tr>
<td>2020-xxT-C</td>
<td></td>
</tr>
<tr>
<td>2020-xxT-C2</td>
<td></td>
</tr>
<tr>
<td>2020-xxT-C3</td>
<td></td>
</tr>
<tr>
<td>2020-xxT-C4</td>
<td></td>
</tr>
</tbody>
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ELTGS = Each Line to Ground Simultaneously

NOTE: When using a GDT fail-short device, it is imperative that all components associated and connected to the GDT with failsafe be tested in their respective completely integrated environment (finished product) to assure desired operation.