



## Features

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

## Applications

- Telecommunications
- Industrial electronics
- Avionics

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

## Characteristics

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

| Characteristic  | Model No. |          |          |
|---|-----------|----------|----------|
|   | 2020-15T  | 2020-23T | 2020-42T |
| Minimum DC Sparkover (100 V/s)<br>Throughout Service Life                     | 60 V      | 180 V    | 360 V    |
| Maximum Impulse Sparkover <sup>(1)</sup> (5 kV/μs)<br>Throughout Service Life | 500 V     | 650 V    | 850 V    |

<sup>(1)</sup> 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 .....                     | > 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 .....                            | < 2 pF                              |
| DC Holdover Voltage (Network Applied per ITU-T K.12) |  |                                     |
| 2020-15T .....                                       | 52 V .....                             | < 150 ms                            |
| 2020-23T .....                                       | 80 V .....                             | < 150 ms                            |
| 2020-42T .....                                       | 135 V .....                            | < 150 ms                            |
| Service Life <sup>(2)</sup> .....                    | 8/20 μs, 10 kA .....                   | 1 operation                         |
|  | 10/1000 μs, 1 kV, 200 A .....          | 100 operations <sup>(3)</sup>       |
|  | 2/10 μs, 6 kV, 2000 A .....            | 10 operations <sup>(3)</sup>        |
|  | 10/700 μs, 6 kV, 300 A .....           | 50 operations <sup>(3)</sup>        |
|  | 8/20 μs, 500 A, 1.2/50 μs, 500 V ..... | 150 operations <sup>(3)</sup>       |
|  | 600 V, 10 Arms, 0.2 sec .....          | 10 operations                       |
|  | 600 Vrms, 0.5 A - 60 A .....           | Fail-Short activates <sup>(4)</sup> |
|  | 230 Vrms, 0.5 A-25 A .....             | Fail-Short activates <sup>(4)</sup> |
| Operating Temperature Range .....                    |  | -40 °C to +90 °C                    |
| Storage Temperature Range .....                      |  | -55 °C to +90 °C                    |

### Notes:

<sup>(2)</sup> The rated discharge current is the total current equally divided between each line to ground.

<sup>(3)</sup> Surge polarity should be reversed between consecutive surges (+, -, +, -)

<sup>(4)</sup> Applies only to GDT with optional Fail-Short. GDT operates and will survive with Fail-Short activation.

- At delivery AQL 0.65 Level II, DIN ISO 2859.
- Models with the optional Fail-Short assembly activate at low temperature (215 °C – 217 °C) when required. These models are designed to be soldered either manually or using a selective soldering process that does not exceed 210 °C, below the temperature that the Fail-Short assembly would activate.

## Applications

| Port Protection | GDT Device P/N | TBU® Device P/N                  |
|-----------------|----------------|----------------------------------|
| CanBus          | 2020-23T       | <a href="#">TBU-CA065-100-WH</a> |
| RS232           | 2020-23T       | <a href="#">TBU-CA065-200-WH</a> |
| RS422           | 2020-23T       | <a href="#">TBU-CA065-200-WH</a> |
| RS485           | 2020-23T       | <a href="#">TBU-CA065-200-WH</a> |
| RS485           | 2020-42T       | <a href="#">TBU-CA085-200-WH</a> |
| SDI             | 2020-23T       | <a href="#">TBU-CA065-100-WH</a> |
| VDSL            | 2020-15T       | <a href="#">TBU-CA050-500-WH</a> |

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\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

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.

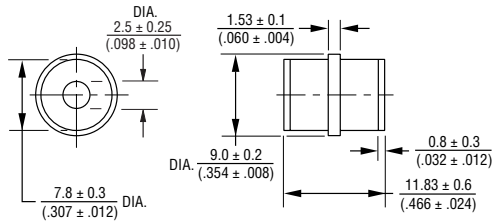
Users should verify actual device performance in their specific applications.

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

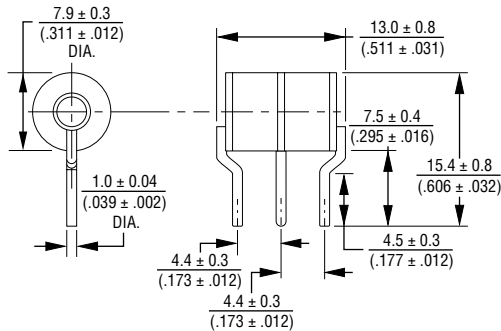
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**Product Dimensions (additional lead form configurations available upon request)**

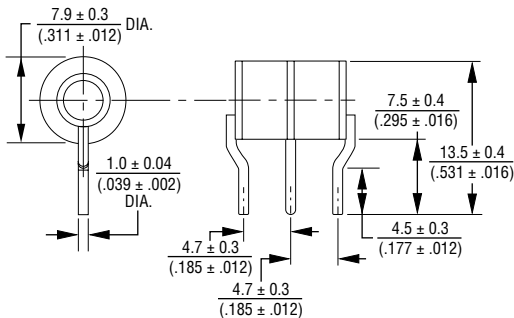
**2020-xxT-A1**



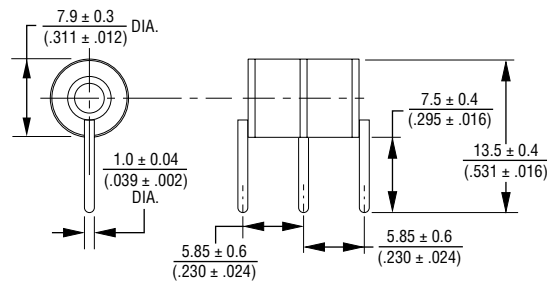
**2020-xxT-C2**



**2020-xxT-C3**

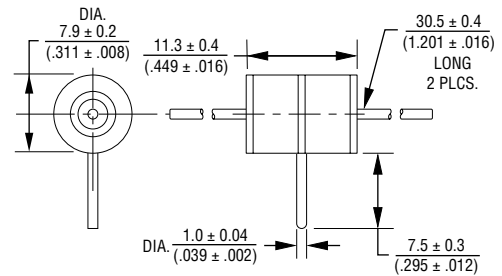


**2020-xxT-C4**

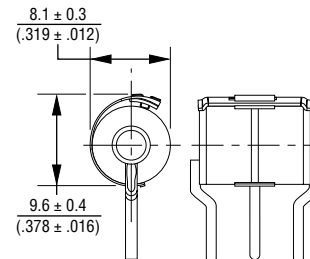


**2020-xxT-C**

**1.0 ± 0.08 mm (.039 ± .003 in.) dia. lead wire**



**FAIL-SHORT CONFIGURATION  
2020-xxT-C2F SHOWN**



DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

UNITS WITH LEADS ARE BASED ON THE  
2020-xxT-A1 BODY.

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

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### How to Order

**2020 - xxT - x x F LF****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.

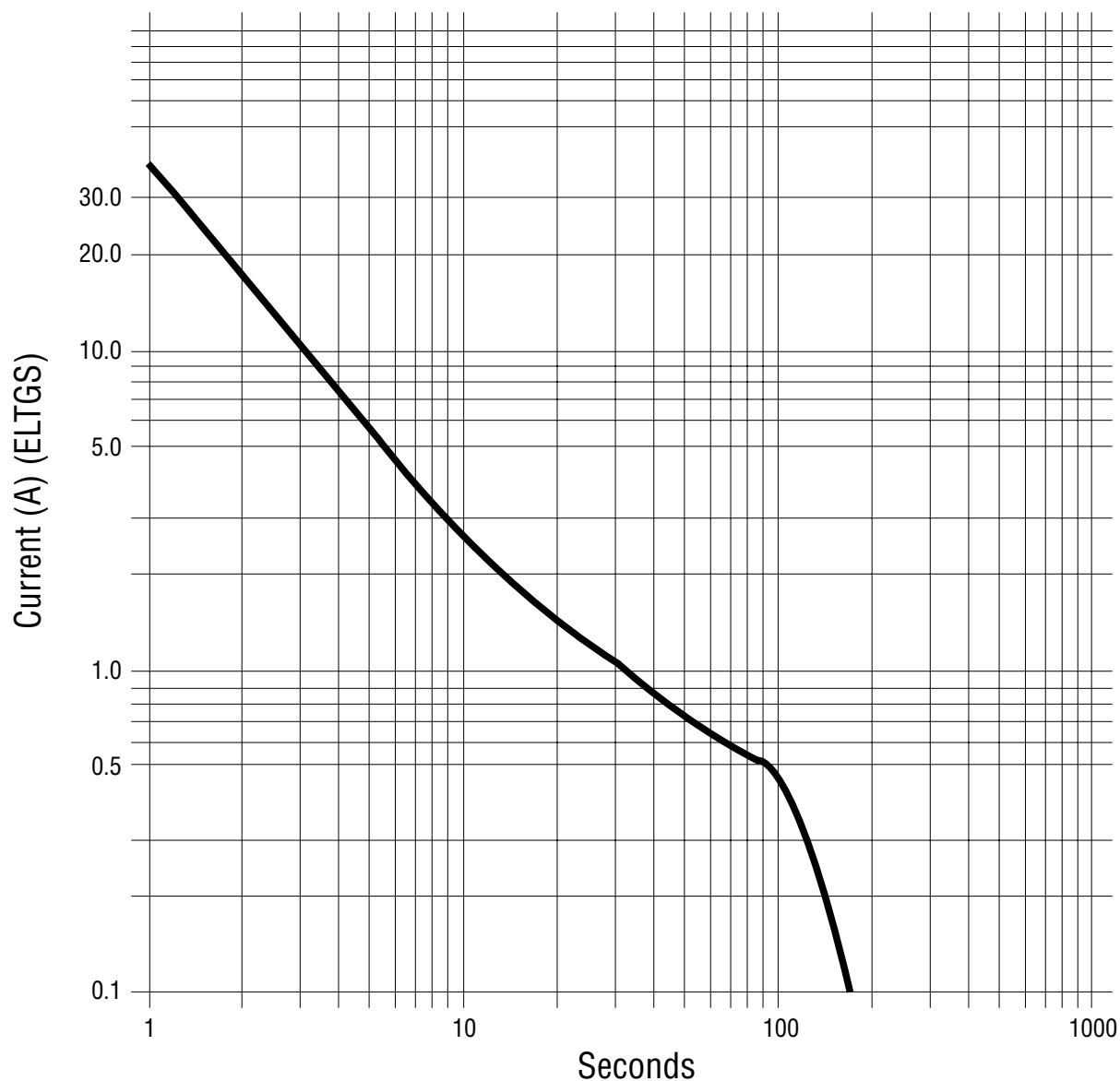
### Packaging Specifications

| Model       | Standard Packaging Quantity |      |      |
|-------------|-----------------------------|------|------|
|             | Bulk (Bag)                  | Tray | Box  |
| 2020-xxT-A1 | 250                         |      | 1000 |
| 2020-xxT-C  |                             | 100  | 900  |
| 2020-xxT-C2 |                             | 100  | 900  |
| 2020-xxT-C3 |                             | 100  | 900  |
| 2020-xxT-C4 |                             | 100  | 900  |

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

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### Switch-Grade Fail-Short Device Shorting Curve 2020-xxT-XF



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.

REV. G 02/16

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# AMEYA360

## Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit [www.ameya360.com](http://www.ameya360.com)

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd  
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email [amall@ameya360.com](mailto:amall@ameya360.com)

QQ 800077892

Skype ameyasales1 ameyasales2

➤ Customer Service :

Email [service@ameya360.com](mailto:service@ameya360.com)

➤ Partnership :

Tel +86 (21) 64016692-8333

Email [mkt@ameya360.com](mailto:mkt@ameya360.com)