



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## 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) Throughout Service Life	60 V	180 V	360 V
Maximum Impulse Sparkover <sup>(1)</sup> (5 kV/μs) 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.

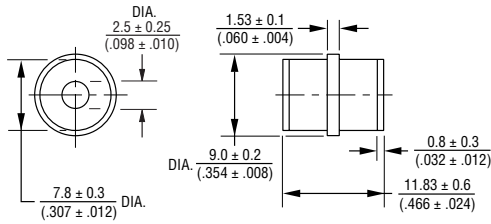
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

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

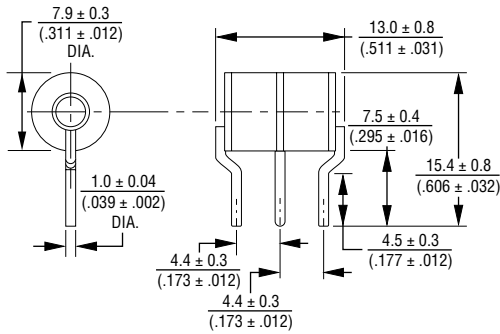
**BOURNS®**

Product Dimensions (additional lead form configurations available upon request)

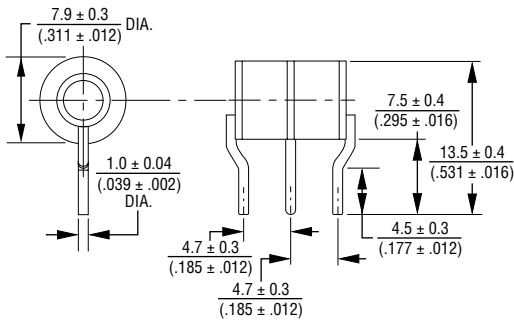
**2020-xxT-A1**



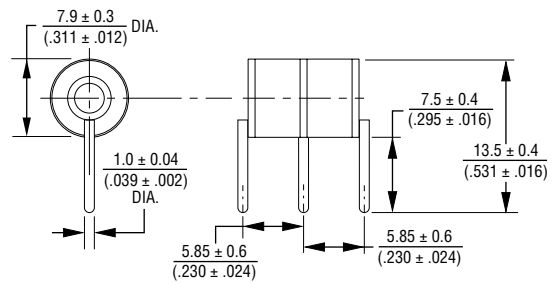
**2020-xxT-C2**



**2020-xxT-C3**

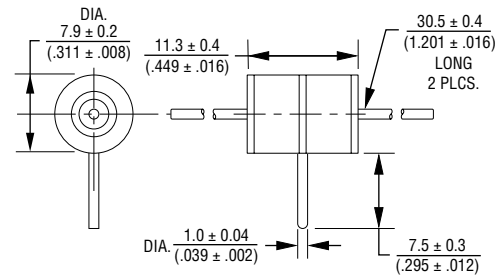


**2020-xxT-C4**

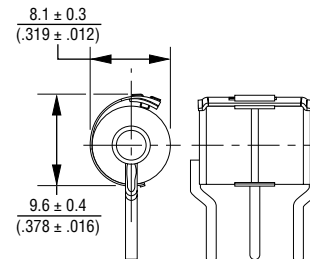


**2020-xxT-C**

**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.

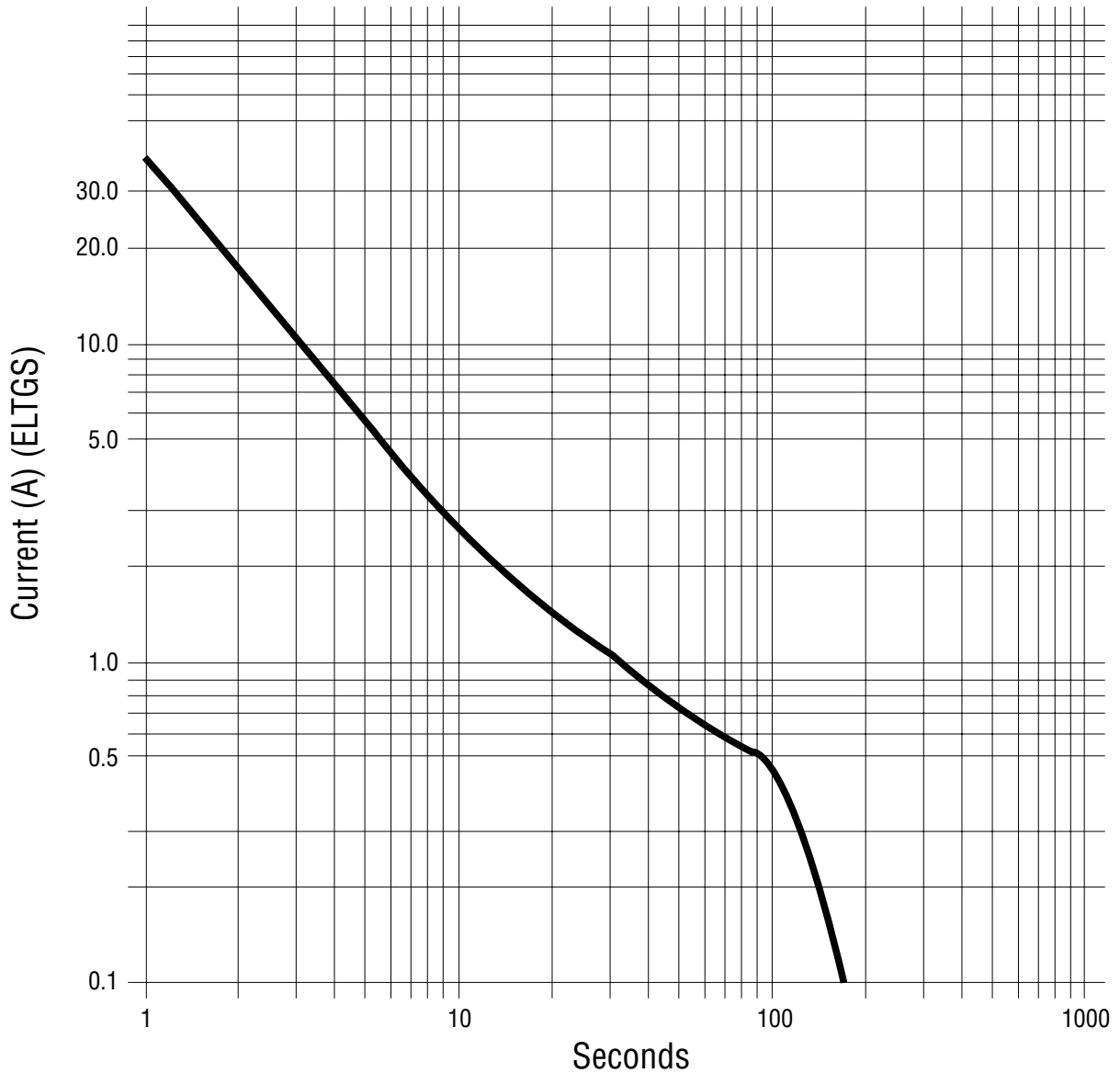
## Packaging Specifications

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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