

# ANTREX Electronics

## Electronic Components Sourcing Information

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### Product Reference Information

**Part Number:** GDT220E-50-T2-BX  
**Manufacturer:** Bourns Inc.  
**Package:** Box  
**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/bourns-inc/gdt220e-50-t2-bx.html>

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### Contact Information

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### Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

**Note:**

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



## Features

- Fast response time
- Wide temperature range
- High surge current rating
- Low capacitance and insertion loss
- Stable performance throughout life
- Small surface mount package
- RoHS compliant\*

## Applications

- Surge Protective Devices (SPDs)
- Power systems
- Industrial equipment

## GDT220E Series - High Energy Gas Discharge Tube Arrestor

### General Information

The Model GDT220E Series are UL recognized GDT devices rated at 60 kA maximum on an 8/20  $\mu$ s waveform, providing a volume and space-saving solution for high density and space-restricted applications. This device is available in various lead shapes to fit a variety of configuration requirements.

### Product Characteristics

|                                        |                   |
|----------------------------------------|-------------------|
| Storage Temperature Range .....        | -55 °C to +105 °C |
| Operating Temperature Range .....      | -55 °C to +105 °C |
| Climate Category (IEC 60068-1) .....   | 55 / 105 / 21     |
| Moisture Sensitivity Level (MSL) ..... | 1                 |
| ESD Classification - HBM .....         | N/A               |

### How to Order

|                                                              |                          |  |  |  |
|--------------------------------------------------------------|--------------------------|--|--|--|
| Description                                                  | GDT 2 20 E - xx - A - BX |  |  |  |
| GDT = Gas Discharge Tube - Next-Generation Series            |                          |  |  |  |
| Electrodes                                                   |                          |  |  |  |
| 2 = 2-Electrode                                              |                          |  |  |  |
| Size                                                         |                          |  |  |  |
| 20 = 20 mm Diameter                                          |                          |  |  |  |
| Sub-series Designator                                        |                          |  |  |  |
| E = High Energy GDT                                          |                          |  |  |  |
| Voltage                                                      |                          |  |  |  |
| 15 = 150 V      35 = 350 V      47 = 470 V      80 = 800 V   |                          |  |  |  |
| 23 = 230 V      40 = 400 V      50 = 500 V      100 = 1000 V |                          |  |  |  |
| 30 = 300 V      42 = 420 V      60 = 600 V                   |                          |  |  |  |
| Terminal Designator**                                        |                          |  |  |  |
| A = Leadless (Standard)                                      |                          |  |  |  |
| T1 = Two Side Terminals Type 1                               |                          |  |  |  |
| T2 = Two Side Terminals Type 2                               |                          |  |  |  |
| Packaging Options                                            |                          |  |  |  |
| BX = Box (Standard)                                          |                          |  |  |  |

\*\*Special terminals upon request

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



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

\*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.

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### Additional Information

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### Agency Recognition

| Agency | Category | Agency File No. |
|--------|----------|-----------------|
| UL     | 1449-4   | E313168         |

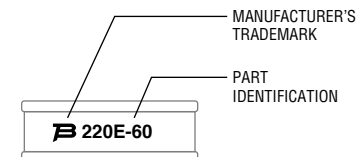
### Circuit Diagram



Note: Gas discharge tubes are bidirectional and non-polarized.

### Typical Part Marking

Represents total content. Layout may vary.



DATE CODE:  
WEEK AND YEAR  
OF MANUFACTURE  
• WEEK (01 - 52)  
• YEAR (LAST TWO DIGITS)  
EXAMPLE:  
2023 = WEEK 20, YEAR 2023

### Packaging Specifications

| Model         | Quantity per Box |
|---------------|------------------|
| GDT220E-xx-A  | 800              |
| GDT220E-xx-T1 | 800              |
| GDT220E-xx-T2 | 1280             |

## GDT220E Series - High Energy Gas Discharge Tube Arrestor

**BOURNS®**

### Electrical Characteristics

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

| Bourns<br>Part No. | Device Specifications         |                                   |                                                |          |                                                  |                        |                                         |                    |                                |                |
|--------------------|-------------------------------|-----------------------------------|------------------------------------------------|----------|--------------------------------------------------|------------------------|-----------------------------------------|--------------------|--------------------------------|----------------|
|                    | DC Breakdown Voltage<br>±20 % | Maximum Impulse Breakdown Voltage | Maximum Impulse Discharge Current<br>(8/20 μs) |          | Maximum Impulse Discharge Current<br>(10/350 μs) | TOV<br>1200 V<br>0.2 S | Maximum Follow-On Current<br>@ 50/60 Hz | MCOV<br>@ 50/60 Hz | Minimum Insulation Resistance¹ | Breakdown Time |
|                    | 100~2000 V/s                  | 1.2/50 μs<br>6 kV                 | 1 time                                         | 10 times | 1 time                                           |                        |                                         |                    |                                |                |
| GDT220E-15         | 150 V                         | 1100 V                            | 60 kA                                          | 40 kA    | 12.5 kA                                          | 300 A                  | N/A                                     | N/A                | 1 GΩ                           | <100 ns        |
| GDT220E-23         | 230 V                         | 1100 V                            |                                                |          |                                                  |                        |                                         | 52 V               |                                |                |
| GDT220E-30         | 300 V                         | 1100 V                            |                                                |          |                                                  |                        |                                         | 95 V               |                                |                |
| GDT220E-35         | 350 V                         | 1100 V                            |                                                |          |                                                  |                        | 50 A                                    | 130 V              |                                |                |
| GDT220E-40         | 400 V                         | 1200 V                            |                                                |          |                                                  |                        |                                         | 150 V              |                                |                |
| GDT220E-42         | 420 V                         | 1200 V                            |                                                |          |                                                  |                        |                                         | 175 V              |                                |                |
| GDT220E-47         | 470 V                         | 1300 V                            |                                                |          |                                                  |                        |                                         | 220 V              |                                |                |
| GDT220E-50         | 500 V                         | 1300 V                            |                                                |          |                                                  |                        |                                         | 100 A              |                                |                |
| GDT220E-60         | 600 V                         | 1300 V                            |                                                |          |                                                  |                        |                                         |                    |                                |                |
| GDT220E-80         | 800 V                         | 1400 V                            |                                                |          |                                                  |                        |                                         |                    |                                |                |
| GDT220E-100        | 1000 V                        | 1500 V                            |                                                |          |                                                  |                        |                                         |                    |                                |                |

Notes:

- (1) IR Test Voltage: 50 V for GDT220E-15, 100 V for GDT220E-23 through GDT, 220E-40, 250 V for GDT220E-42 through GDT220E-100.
- At delivery AQL 0.65 Level II, DIN ISO 2859.
- DC and Impulse Sparkover values are in ionized mode @ 25 °C.
- Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev. D.
- Impulse Sparkover voltage is expressed as a maximum value, with a 99 % probability of measured values within limit.
- IR limits after Life Ratings > 100 MΩ.
- Network applied (per *ITU-T K.12 Edition 9.0, Section 7*).
- DC Sparkover Voltage limits after Life Ratings may exceed +20 % but will continue to protect without venting (per *ITU-T K.12 Edition 9.0, Section 6*, where applicable).

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

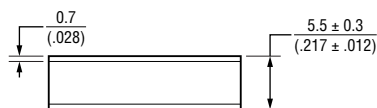
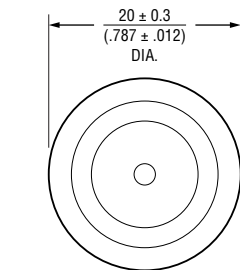
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# GDT220E Series - High Energy Gas Discharge Tube Arrestor

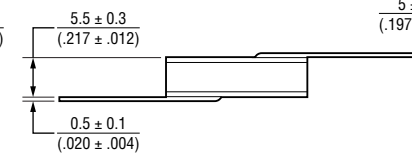
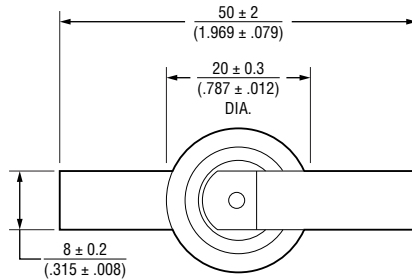
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## Product Dimensions

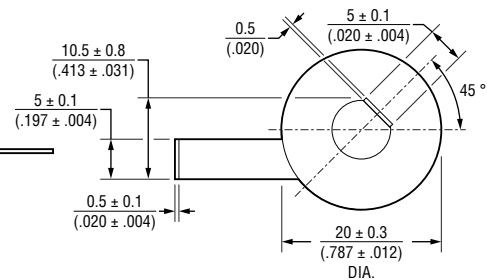
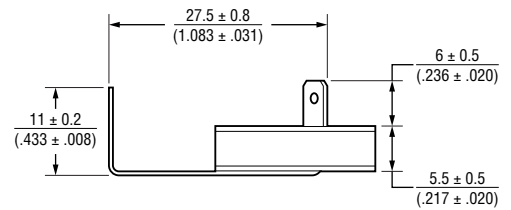
GDT220E-xx-A



GDT220E-xx-T1



GDT220E-xx-T2



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

REV. A 08/23

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