

# ANTREX Electronics

## Electronic Components Sourcing Information

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### Product Reference Information

**Part Number:** GDT212E-50-T2-BX

**Manufacturer:** Bourns Inc.

**Package:** Box

**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/bourns-inc/gdt212e-50-t2-bx.html>

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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

## GDT212E Series - High Energy Gas Discharge Tube Arrestor

### General Information

The Model GDT212E Series are UL recognized GDT devices rated at 40 kA maximum on an 8/20  $\mu$ s waveform, providing a broad DC breakdown voltage solution for high-density surge capability requirements. 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 12 E - xx - A - BX   |  |  |  |
| GDT = Gas Discharge Tube - Next-Generation Series |                            |  |  |  |
| Electrodes .....                                  | 2 = 2-Electrode            |  |  |  |
| Size .....                                        | 12 = 12 mm Diameter        |  |  |  |
| Sub-series Designator .....                       | E = High Energy GDT        |  |  |  |
| Voltage .....                                     | 23 = 230 V      47 = 470 V |  |  |  |
|                                                   | 25 = 250 V      50 = 500 V |  |  |  |
|                                                   | 30 = 300 V      60 = 600 V |  |  |  |
|                                                   | 35 = 350 V      70 = 700 V |  |  |  |
|                                                   | 42 = 420 V      80 = 800 V |  |  |  |
| Terminal Designator** .....                       | A = Leadless (Standard)    |  |  |  |
|                                                   | T1 = M3 Stud Terminals     |  |  |  |
|                                                   | T2 = Parallel Terminals    |  |  |  |
| Packaging Options .....                           | BX = Box (Standard)        |  |  |  |

\*\*Special terminals upon request

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\*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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### Agency Recognition

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

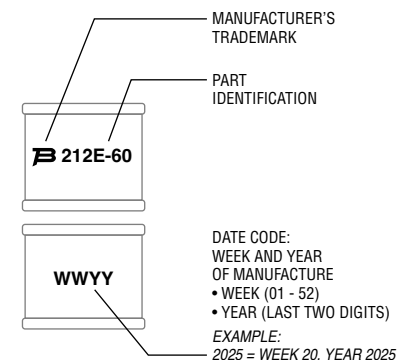
### Circuit Diagram



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

### Typical Part Marking

Represents total content. Layout may vary.



### Packaging Specifications

| Model         | Quantity per Box |
|---------------|------------------|
| GDT212E-xx-A  | 1200             |
| GDT212E-xx-T1 | 1050             |
| GDT212E-xx-T2 | 1200             |

# GDT212E Series - High Energy Gas Discharge Tube Arrestor

**BOURNS®**

## Electrical Characteristics

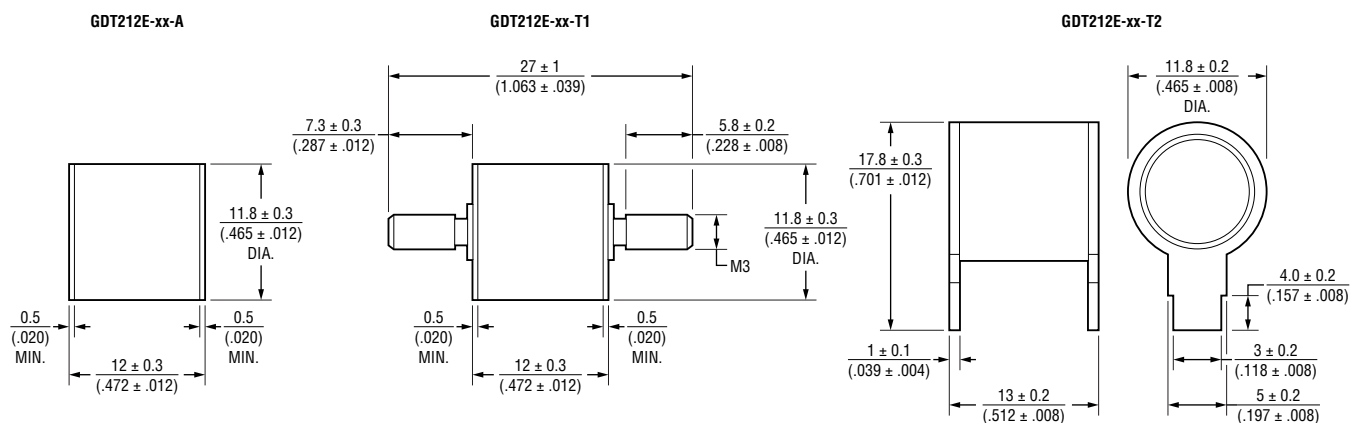
Test Methods per ITU-T K.12, IEEE C62.31 and IEC 61643-311 GDT standards.

| 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 Resistance <sup>1</sup> | Breakdown Time |
|                    | 100~2000 V/s                  | 1.2/50 μs<br>6 kV                 | 1 time                                         | 10 times | 1 time                                           |                        |                                         |                    |                                            |                |
| GDT212E-23         | 230 V                         | 1100 V                            | 40 kA                                          | 30 kA    | 8 kA                                             | 100 A                  | N/A                                     | 95 V               | 1 GΩ                                       | <100 ns        |
| GDT212E-25         | 250 V                         | 1100 V                            |                                                |          |                                                  |                        | 50 A                                    | 130 V              |                                            |                |
| GDT212E-30         | 300 V                         | 1100 V                            |                                                |          |                                                  |                        |                                         | 150 V              |                                            |                |
| GDT212E-35         | 350 V                         | 1100 V                            |                                                |          |                                                  |                        |                                         | 175 V              |                                            |                |
| GDT212E-42         | 420 V                         | 1200 V                            |                                                |          |                                                  |                        | 100 A                                   | 220 V              |                                            |                |
| GDT212E-47         | 470 V                         | 1300 V                            |                                                |          |                                                  |                        |                                         | 255 V              |                                            |                |
| GDT212E-50         | 500 V                         | 1300 V                            |                                                |          |                                                  |                        |                                         |                    |                                            |                |
| GDT212E-60         | 600 V                         | 1400 V                            |                                                |          |                                                  |                        |                                         |                    |                                            |                |
| GDT212E-70         | 700 V                         | 1500 V                            |                                                |          |                                                  |                        |                                         |                    |                                            |                |
| GDT212E-80         | 800 V                         | 1500 V                            |                                                |          |                                                  |                        |                                         |                    |                                            |                |

### Notes:

- (1) IR Test Voltage: 100 V for GDT212E-23 through GDT212E-35; 250 V for GDT212E-42 through GDT212E-80.
- 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 MQ.
- 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).

## Product Dimensions



REV. 6 10/25

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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