

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 μ 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

| | |
|---------------------------------|--|
| GDT 2 20 E - xx - A - BX | |
| Description _____ | 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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WARNING Cancer and Reproductive Harm - 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

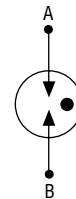
Click these links for more information:



Agency Recognition

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

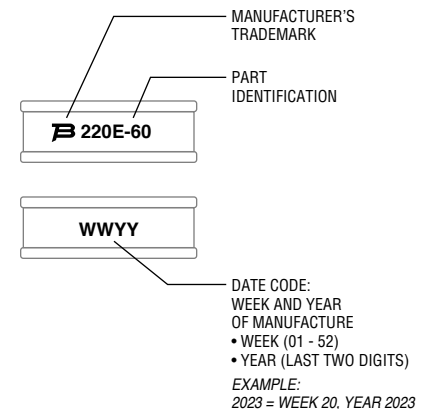
Circuit Diagram



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

Typical Part Marking

Represents total content. Layout may vary.



Packaging Specifications

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

GDT220E Series - High Energy Gas Discharge Tube Arrestor



Electrical Characteristics

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

| Bourns Part No. | Device Specifications | | | | | | | | | |
|-----------------|---------------------------------|-----------------------------------|--|---------------------|--|------------------|--------------------------------------|-----------------|--|----------------|
| | DC Breakdown Voltage $\pm 20\%$ | Maximum Impulse Breakdown Voltage | Maximum Impulse Discharge Current (8/20 μ s) | | Maximum Impulse Discharge Current (10/350 μ s) | TOV 1200 V 0.2 S | Maximum Follow-On Current @ 50/60 Hz | MCOV @ 50/60 Hz | Minimum Insulation Resistance ¹ | Breakdown Time |
| | | | 100~2000 V/s | 1.2/50 μ s 6 kV | | | | | | |
| GDT220E-15 | 150 V | 1100 V | 60 kA | 40 kA | 12.5 kA | 300 A | N/A | N/A | 1 G Ω | <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 | 255 V | | |
| 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 M Ω .
- 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).

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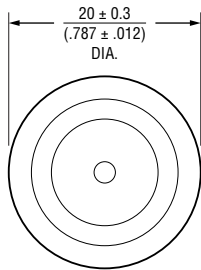
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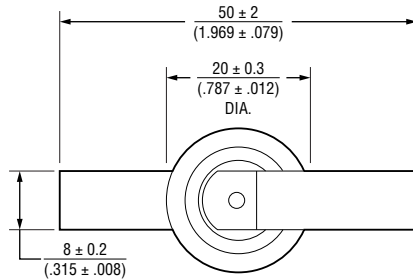
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Product Dimensions

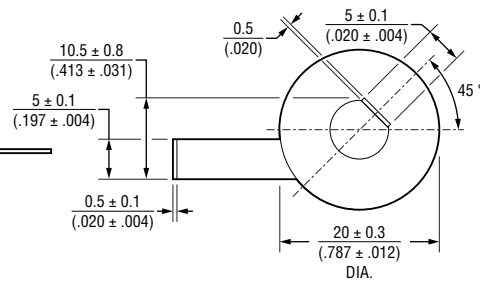
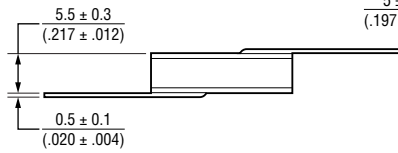
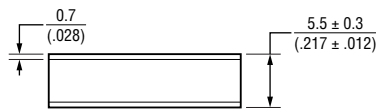
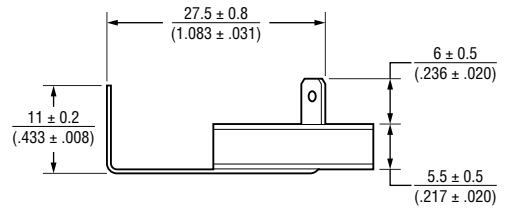
GDT220E-xx-A



GDT220E-xx-T1



GDT220E-xx-T2



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

REV. A 08/23

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