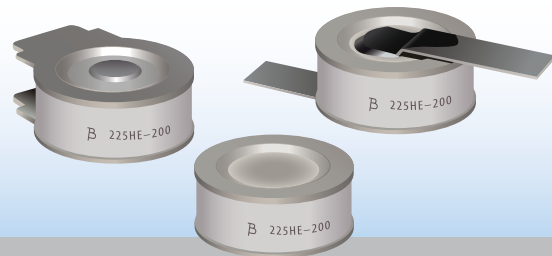


Bourns® GDT225HE Series High-Voltage, High-Energy Gas Discharge Tube Arrestor

NEW PRODUCT BRIEF



INTRODUCTION

Bourns® GDT225HE Series High-Voltage, High-Energy Gas Discharge Tube (GDT) Arrestors offer a broad DCBV from 1000 to 2000 V, which provides superior surge protection. This new series features I_n 40 kA and I_{max} 60 kA ratings on an 8/20 μ s waveform that delivers robust performance in lightning-prone and high-energy applications.

In addition, the GDT225HE Series meets low profile, reduced volume and space-saving requirements in an increasing list of high-density and space-restricted PCB-based designs. These new GDTs are also available in various lead shapes to fit in different configuration specifications.

FEATURES

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

CIRCUIT DIAGRAM



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

BENEFITS

- Very high current handling capability for AC power lines applications in a small footprint
- High 2000 V DC breakdown voltage and lead shape options to fit different configuration requirements
- Low-profile package provides a volume and space-saving solution for high-density and space-restricted PCB designs
- Offers lower clamping voltage compared to typical MOVs that have the same surge current rating
- GDTs commonly have a longer lifespan than other types of surge arrestors, and are known to be able to withstand a higher volume of surge events without degradation

MARKET DEMAND OVERVIEW

The GDT225E-200 is targeted for high-energy AC-DC power systems, including EV charging infrastructure, Battery Energy Storage Systems (BESS), and industrial power conversion equipment where commutation or fault insertion events are known to occur. The series' ability to safely conduct high I^2t energy during transient conditions makes it well-suited for system-level surge and fault protection, equipotential bonding, and applications where high-energy discharge must be safely diverted and controlled. Designers benefit from an advanced, durable, and non-degrading protection component that meets their elevated operating voltage protection requirements.

HOW TO ORDER

GDT 2 25 HE - xxx - A - BX	
Description	GDT = Gas Discharge Tube - Next-Generation Series
Electrodes	2 = 2-Electrode
Size	25 = 25 mm Diameter
Sub-series Designator	HE = High-Voltage, High-Energy GDT
Voltage	100 = 1000 V 160 = 1600 V 120 = 1200 V 180 = 1800 V 140 = 1400 V 200 = 2000 V
Terminal Designator**	A = Leadless (Standard) T1 = Two Side Terminals T2 = Parallel Terminals
Package Designator	BX = Box (Standard)
** Special terminals upon request.	

APPLICATIONS

- Surge Protective Devices (SPDs)
- Power systems
- Industrial equipment
- Renewable energy (solar/wind) systems
- Energy storage systems

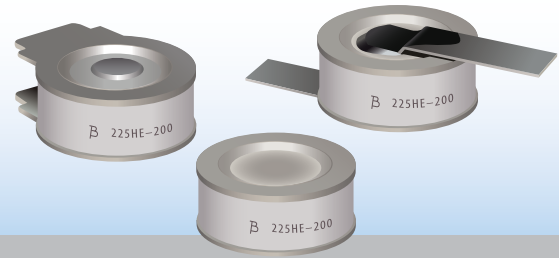
MORE INFORMATION

- [AC Power SPDs](#)
- [High-Energy MOVs](#)
- [High-Current GDTs](#)
- [Power TVS \(PTVS\) Diodes](#)

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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ELECTRICAL CHARACTERISTICS

Part Number	Device Specifications (1)									
	DC Breakdown Voltage ±20 %	Maximum Impulse Breakdown Voltage	Maximum Impulse Discharge Current (8/20 µs)		Maximum Impulse Discharge Current (10/350 µs)	TOV 1200 V 0.2 Sec.	Maximum Follow-On Current @ 50/60 Hz	MCOV ¹ @ 50/60 Hz	Minimum Insulation Resistance ²	Breakdown Time
	100~2000 V/s	1.2/50 µs 6 kV	2 Times	15 Times	1 Time					
GDT225HE-100	1000 V	1800 V	60 kA	40 kA	12.5 kA	300 A	100 A	255 V	1 GΩ	<100 ns
GDT225HE-120	1200 V	2100 V								
GDT225HE-140	1400 V	2400 V								
GDT225HE-160	1600 V	2500 V								
GDT225HE-180	1800 V	2800 V								
GDT225HE-200	2000 V	3000 V								

For full characteristics, see data sheet

(1) By a suitable MOV in series.

(2) IR Test Voltage: 100 V.

• At delivery AQL 0.65 Level II, DIN ISO 2859-1.

• 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).

PRODUCT DIMENSIONS

GDT225HE-xxx-A

GDT225HE-xxx-T1

GDT225HE-xxx-T2

