Littelfuse
Expertise Applied | Answers Delivered

Gas Discharge Tubes
GTCX28-XXXM-R20 Series

Littelfuse Circuit Protection 8mm 2Pole GDTs (ceramic gas discharge tubes), are commonly used to help protect sensitive telecom equipment such as communication lines, signal lines and data transmission lines from damage caused by transient surge voltages that typically result from lightning strikes and equipment switching operations.

Littelfuse Circuit Protection GDTs offer a high level of surge protection, low capacitance and a broad array of breakover voltage levels, making them suitable for applications such as MDF (Main Distribution Frame) modules, high data-rate telecom applications (e.g. ADSL, VDSL), and surge protection on power lines. Littelfuse Circuit Protection GDTs, can help equipment meet the most stringent regulatory standards.



Benefits:

- Helps provide overvoltage fault protection against high energy surges
- Suitable for high-frequency applications

Features:

- 2Pole, 8mm devices
- Broad voltage range from 75V-350V
- Various form factors: surface mount, axial leads, no leads
- Low capacitance and insertion loss
- UL 497B recognized
- RoHS compliant
- Devices tested per ITU K.12 recommendations
- Non-radioactive materials

Applications

- Telecommunications
  - MDF modules, xDSL equipment, RF system protection, antenna, base station
- Industrial and consumer electronics, such as
  - Surge protectors
  - Alarm system

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Device Voltage Ratings and Part Marking

Part Number	DC Sparkover	Impulse Sparkover		DC Holdover Voltage	On-State Voltage
	@100V/s ±20% Tolerance (V)	@100 V/µs (V)	@1000 V/µs (V)	Per ITU K.12 (<150ms) (V)	Nominal (@ 1A) (V)
GTCX28-750M-R20	75	450	550	<52	20
GTCX28-900M-R20	90	450	550	<52	20
GTCX28-141M-R20	140	500	600	<80	20
GTCX28-151M-R20	150	500	600	<80	20
GTCX28-201M-R20	200	600	700	<135	20
GTCX28-231M-R20	230	600	700	<135	20
GTCX28-251M-R20	250	600	700	<135	20
GTCX28-261M-R20	260	700	800	<135	20
GTCX28-301M-R20	300	800	900	<150	20
GTCX28-351M-R20	350	900	1000	<150	20

Note:X options: S: Surface-mount; A: Axial-leaded; N: No-leaded
Part Marking : XX = lot code

Device Surge Rating, Capacitance, Insulation Resistance, UL

Part Number	Impulse Discharge Current	Impulse Life	AC Discharge Current (1sec duration; 10 hits)	Capacitance	Insulation Resistance	UL Rating
	8x20µs 10 hits	10x1000µs 300 hits	@50 Hz	@1Mhz	@100V*	UL497B #E179610
GTCX28-XXXM-R20	20kA	100A	20Arms	<1.5pF	10,000 (MΩ)	All Devices

* Devices <=150V measured @ 50V;

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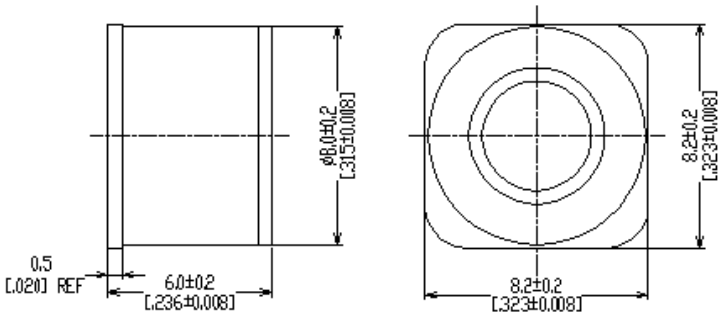
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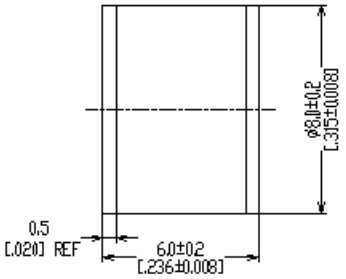
Product Dimensions

DIMENSIONS = MILLIMETERS [INCHES]

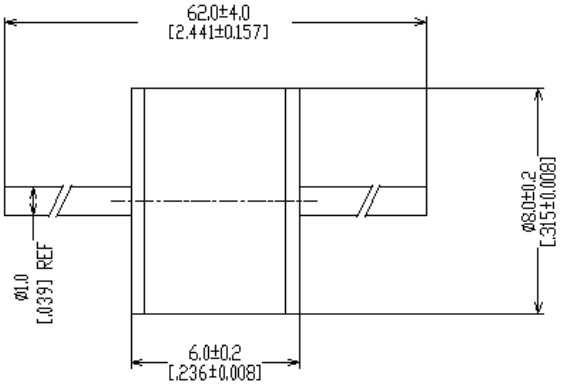
Surface-mount (GTCS28-XXXM-R20)



No Leads (GTCN28-XXXM-R20)

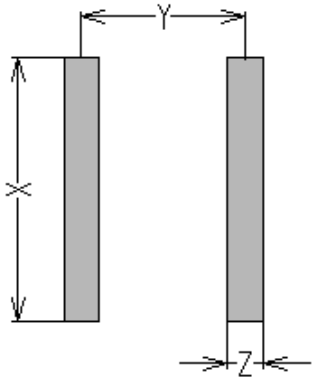


Axial Leads (GTCA28-XXXM-R20)



Pad Layout – Surface- mount Devices (GTCS28-XXXM-R20)

	X	Y	Z
	NOM	NOM	NOM
mm:	9.0	5.6	1.2
in*:	(0.354)	(0.220)	(0.047)



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General Characteristics

No Radioactive Material
Storage Temperature: -40ºC to +90ºC
Operating Temperature: -40ºC to +90ºC
Body: Nickel Plated
Leads: Surface-mount, Axial Devices: Tin Plated Devices with No Leads: Nickel Plated *Soldering Note: Devices with no leads are non-solderable; meant for insertion into magazine clips*

Packaging Information

Part Description	Tray / Reel	Standard Package
No Leads: GTCN28-XXXM-R20	100pcs	2,000pcs
Axial Leads: GTCA28-XXXM-R20	100pcs	1,000pcs
Surface-mount: GTCS28-XXXM-R20	100pcs	2,000pcs
Tape & Reel SMD part: GTCS28-XXXM-R20-2	500pcs	4,000pcs

Part Numbering System

Example Part Number: GTCX28-231M-R20	
GT =	Gas Tube
C =	Ceramic
X =	Lead Configuration: **N**= No leads; **A**= Axial Leads; **S**= Surface-mount
2 =	2 Electrode device
8 =	8mm Diameter
231 =	DC Spark Over Voltage of 230V (at 100V/s)
M =	Tolerance of 20% on DC Spark Over Voltage
R =	Product Family Designator
20 =	Surge rating: 8x20µs 20kA 10 times

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Part Marking Reference

Example Part Marking: XX 23 R20 GN	
XX =	Manufacture Mark
23 =	Voltage Designator (23 = 230V)
R20 =	Product Family Designator + Surge Current 20kA (8x20µs 10 hits)
GN =	Year and Week of Manufacture

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