

## Gas Discharge Tubes GTCX28-XXXM-R05 Series

Littelfuse Circuit Protection Products 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 Products 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-600V
- 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

## GTCX28-XXXM-R05 Series

### Device Voltage Ratings and Part Marking

Part Number	DC Sparkover @100V/s ±20% Tolerance (V)	Impulse Sparkover		DC Holdover Voltage Per ITU K.12 (<150ms) (V)	On-State Voltage Nominal (@ 1A) (V)
		@100 V/μs (V)	@1000 V/μs (V)		
GTCX28-750M-R05	75	450	550	<52	20
GTCX28-900M-R05	90	450	550	<52	20
GTCX28-141M-R05	140	500	600	<80	20
GTCX28-151M-R05	150	500	600	<80	20
GTCX28-201M-R05	200	600	700	<135	20
GTCX28-231M-R05	230	600	700	<135	20
GTCX28-251M-R05	250	600	700	<135	20
GTCX28-261M-R05	260	700	800	<135	20
GTCX28-301M-R05	300	800	900	<150	20
GTCX28-351M-R05	350	900	1000	<150	20
GTCX28-401M-R05	400	900	1000	<150	20
GTCX28-421M-R05	420	900	1000	<150	20
GTCX28-471M-R05	470	1050	1150	<150	20
GTCX28-501M-R05	500	1100	1200	<150	20
GTCX28-551M-R05	550	1300	1400	<150	20
GTCX28-601M-R05	600	1300	1400	<150	20

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

### Device Surge Rating, Capacitance, Insulation

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-R05	5kA	100A	5Arms	<1pF	10,000 (MΩ)	All Devices

\* <1.2pF for 75V and 90V devices

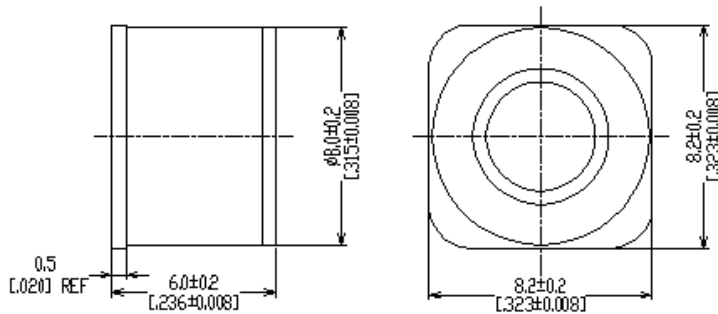
\*\* Devices <=150V measured @ 50V; Devices >=500V measured @ 250V

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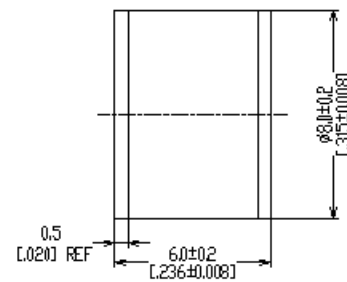
### Product Dimensions

DIMENSIONS = MILLIMETERS [INCHES]

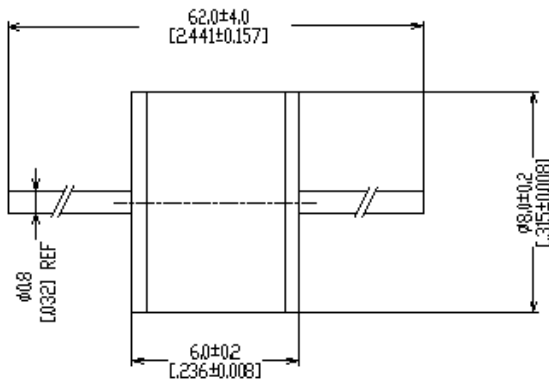
#### Surface-mount (GTCS28-XXXM-R05)



#### No Leads (GTCN28-XXXM-R05)

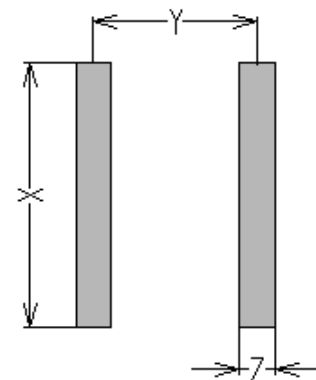


#### Axial Leads (GTCA28-XXXM-R05)



### Pad Layout – Surface-mount Devices (GTCS28-XXXM-R05)

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



## GTCX28-XXXM-R05 Series

### General Characteristics

No Radioactive Material

Storage Temperature: -40°C to +90°C

Operating Temperature: -40°C to +90°C

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-R05	100pcs	2,000pcs
Axial Leads: GTCA28-XXXM-R05	100pcs	1,000pcs
Surface-mount: GTCS28-XXXM-R05	100pcs	2,000pcs
Tape & Reel SMD part: GTCS28-XXXM-R05-2	500pcs	4,000pcs

### Part Numbering System

#### Example Part Number: GTCX28-351M-R05

GT = Gas Tube

C = Ceramic

X = Lead Configuration: **N**= No leads; **A**= Axial Leads; **S**= Surface-mount

2 = 2 Electrode device

8 = 8mm Diameter

351 = DC Spark Over Voltage of 350V (at 100V/s)

M = Tolerance of 20% on DC Spark Over Voltage

R = Product Family Designator

05 = Surge rating: 8x20µs 5kA 10 times

## GTCX28-XXXM-R05 Series

### Part Marking Reference

**Example Part Marking: X 35 R05 GN**

- X = Manufacture Mark
- 35 = Voltage Designator (35 = 350V)
- R05 = Product Family Designator + Surge Current 5kA (8x20 $\mu$ s 10 hits)
- GN = Year and Week of Manufacture

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