

TE Circuit Protection 8mm 3Pole 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.

TE 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. Raychem 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:

- 3Pole, 8mm devices
- Broad voltage range from 75V-350V
- Various form factors: surface-mount, leaded, no leads
- Optional fail-short mechanism on some devices
- Low capacitance and insertion loss
- Crowbar overvoltage protection
- 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

GTCX38-XXM-R20 Series

Device Voltage Ratings and Part Marking

Part Number	DC Sparkover @100V/s ±20% Tolerance (V)	Impulse spark-over voltage at 100V/us		Impulse spark-over voltage at 1kV/us		DC Holdover Voltage Per ITU K.12 (<150ms) (V)	On-State Voltage Nominal (@ 1A) (V)
		for 99% of measured values	typical values of distribution	for 99% of measured values	typical values of distribution		
GTCX38-750M-R20	75	400	350	530	480	<52	20
GTCX38-900M-R20	90	400	350	530	480	<52	20
GTCX38-141M-R20	140	420	370	580	550	<80	20
GTCX38-151M-R20	150	420	370	580	550	<80	20
GTCX38-201M-R20	200	530	480	680	650	<135	20
GTCX38-231M-R20	230	530	480	680	650	<135	20
GTCX38-251M-R20	250	530	480	680	650	<135	20
GTCX38-261M-R20	260	600	550	750	700	<135	20
GTCX38-301M-R20	300	780	730	880	850	<150	20
GTCX38-351M-R20	350	850	800	950	900	<150	20

Note: X options: S: Surface-mount; A: Axial-leaded; N: No-leaded; R: Radial leaded

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
GTCX38-XXM-R20	20kA	200A	20Arms	<1pF	10,000 (MΩ)	All Devices

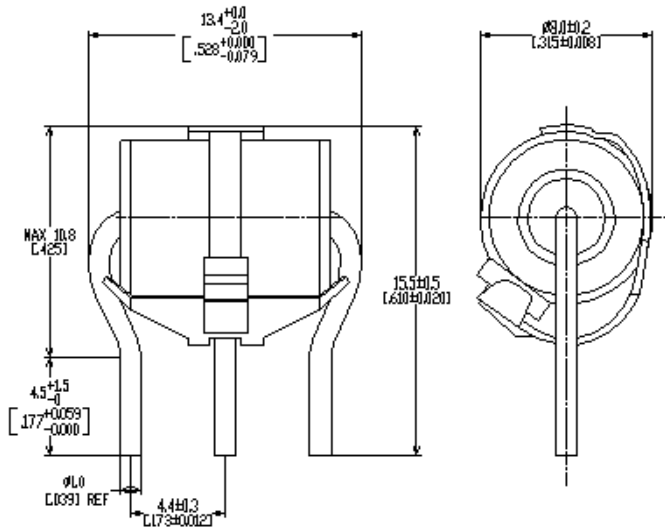
* Devices <=150V measured @ 50V.
Devices >= 500V measured @ 250V

GTCX38-XXXM-R20 Series

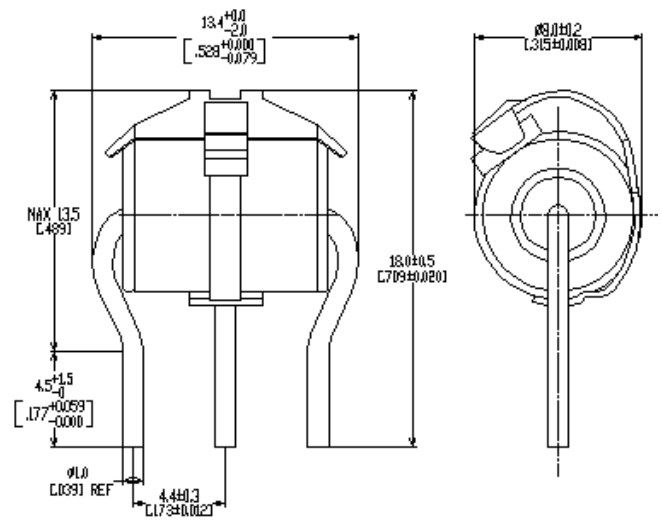
Product Dimensions

DIMENSIONS = MILLIMETERS [INCHES]

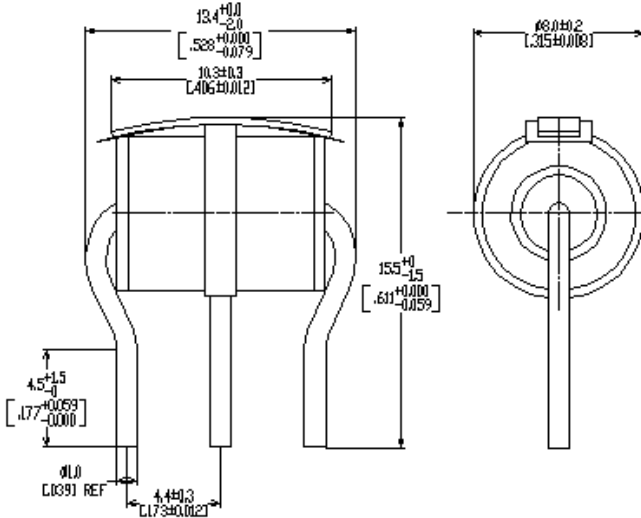
Axial Leaded with- FS (GTCA38-XXXM-R20-FS2)



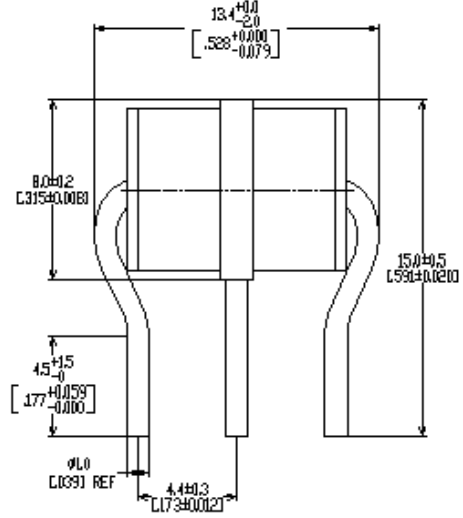
Axial Leaded with-FS (GTCA38-XXXM-R20-FS)



Axial Leaded with- FT (GTCA38-XXXM-R20-FT)

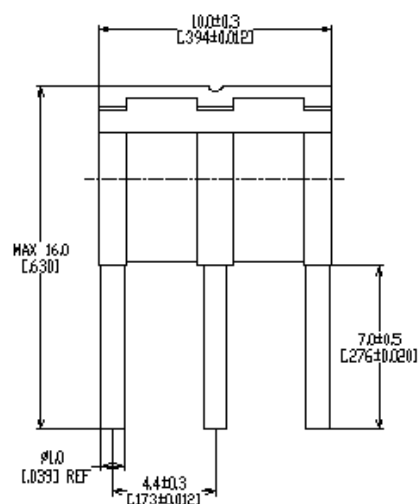


Axial Leaded (GTCA38-XXXM-R20)

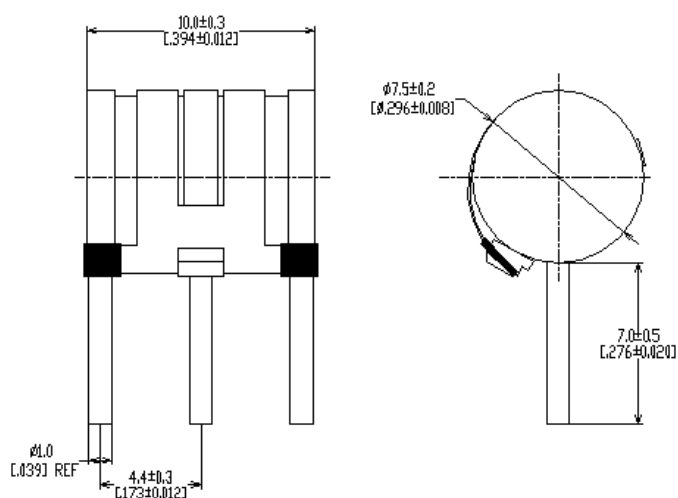


GTCX38-XXXM-R20 Series

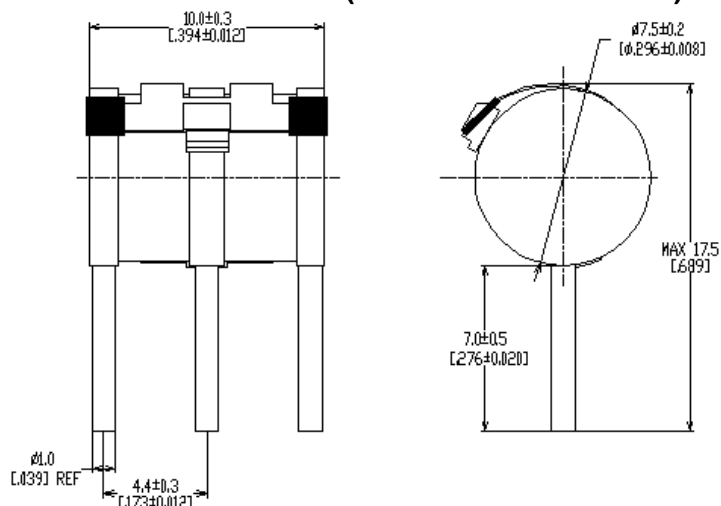
Radial Leaded with- FT (GTCR38-XXXM-R20-FT)



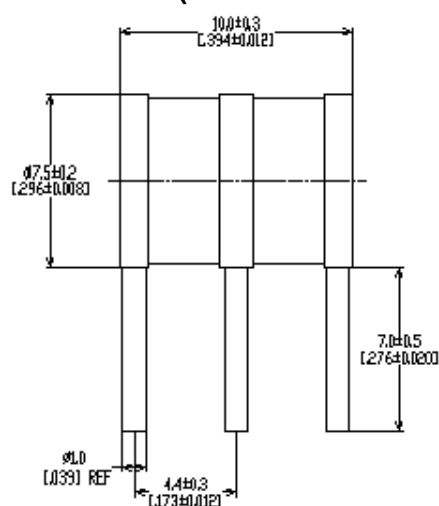
Radial Leaded with-FS (GTCR38-XXXM-R20-FS2)



Radial Leaded with-FS (GTCR38-XXXM-R20-FS)

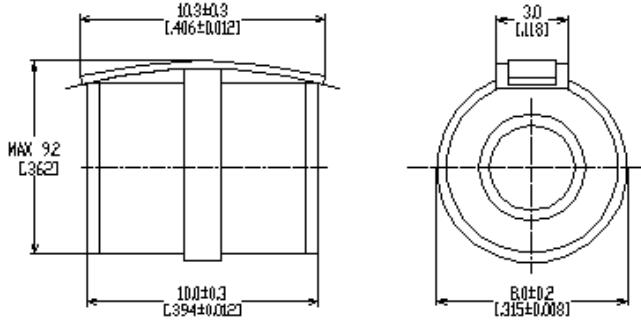


Radial Leaded (GTCR38-XXXM-R20)

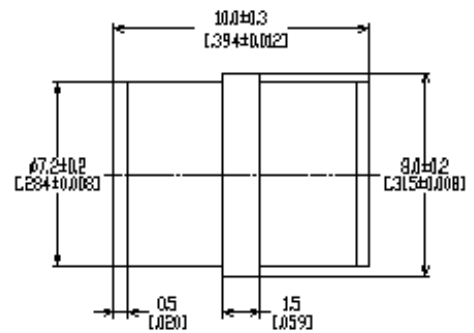


GTCX38-XXXM-R20 Series

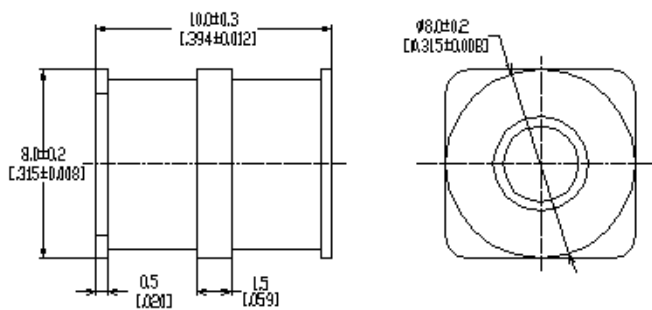
No Leads with-FT (GTCN38-XXXM-R20-FT)



No Leads (GTCN38-XXXM-R20)

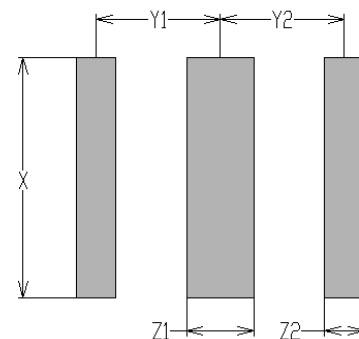


Surface-mount (GTCS38-XXXM-R20)



Pad Layout – Surface-mount Devices (GTCS38-XXXM-R10)

	X	Y1	Y2	Z1	Z2
	NOM	NOM	NOM	NOM	NOM
mm:	9.0	4.65	4.65	2.5	1.5
in*:	(0.354)	(0.183)	(0.183)	(0.098)	(0.059)



GTCX38-XXXM-R20 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, Radial and Axial Devices: Tin Plated

Devices with no leads: Nickel Plated

Soldering Notes: Devices with no leads: non-solderable; suitable for insertion into a magazine clip

Materials Information

RoHS Compliant

ELV Compliant

Directive 2002/95/EC
Compliant

Directive 2000/53/EC
Compliant

Packaging Information

Part Description

No Leaded: GTCN38-XXXM-R20(-FT)
With Leads: GTCA38-XXXM-R20(-FT/-FS(2))
GTCT38-XXXM-R20(-FT/-FS(2))
Surface-mount: GTCS38-XXXM-R20
Surface-mount (T&R): GTCS38-XXXM-R20-2

Tray / Reel

100pcs (Tray)
100pcs (Tray)
100pcs (Tray)
500pcs (Reel)

Standard Package

1,000 pcs
1,000 pcs
1,000 pcs
2,500 pcs

Part Numbering System

Example Part Number: GTCX38-351M-R10-FT/FS/ FS2

GT = Gas Tube
C = Ceramic
X = Lead Configuration: **N**= No leads; **A**= Axial Leads; **S**= Surface-mount; **T**= T Configuration Leads; **R**= Radial Leads

3 = 3 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
20 = Surge rating: 8x20µs 20kA 10 times
FT/FS/FS2 = With Fail-Short mechanism (FT=plastic fail short mechanism on top; FS=solder pellet fail short mechanism on top; FS2=solder pellet fail short mechanism on bottom)

GTCX38-XXXM-R20 Series

Part Marking Reference

Example Part Marking: **XX 35 R20 GN**

XX =	Manufacture Mark
35 =	Voltage Designator (35 = 350V)
R20 =	Product Family Designator + Surge Current 20kA (8x20µs 10 hits)
GN =	Year and Week of Manufacture



308 Constitution Drive, MS R21/2A
Menlo Park, CA USA 94025-1164

Tel (800) 227-7040
(650) 361-6900
Fax (650) 361-2508

www.circuitprotection.com
www.circuitprotection.com.hk (Chinese)
www.circuitprotection.jp (Japanese)

TE Connectivity, TE Connectivity (Logo) and TE (Logo) are trademarks.

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Tyco Electronics Corporation and/or its Affiliates in the TE Connectivity Ltd. family of companies ("TE") reserves the right to change or update, without notice, any information contained in this publication; to change, without notice, the design, construction, processing, or specification of any product; and to discontinue or limit production or distribution of any product. This publication supersedes and replaces all information previously supplied. Without expressed or written consent by an officer of TE, TE does not authorize the use of any of its products as components in nuclear facility applications, aerospace, or in critical life support devices or systems. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. TE only obligations are those in the TE Standard Terms and Conditions of Sale and in no case will TE be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.