

## GTCX35-XXXM-R05 Series

TE Circuit Protection 5mm 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:

- Compact, small form factor suitable for efficient assembly
- Helps provide overvoltage fault protection against high energy surges
- Suitable for high-frequency applications

### Features:

- 3Pole, 5mm devices
- Broad voltage range from 75V-600V
- 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

## GTCX35-XXXM-R05 Series

### Typical Voltage Ratings and Part Marking

| Part Number     | DC Sparkover                     | Impulse Sparkover  |                     | DC Holdover Voltage             | On-State Voltage         |
|-----------------|----------------------------------|--------------------|---------------------|---------------------------------|--------------------------|
|                 | @100V/s<br>±20% Tolerance<br>(V) | @100 V $\mu$ s (V) | @1000 V $\mu$ s (V) | Per ITU K.12<br>(<150ms)<br>(V) | Nominal<br>(@ 1A)<br>(V) |
| GTCX35-750M-R05 | 75                               | 450                | 550                 | <52                             | 20                       |
| GTCX35-900M-R05 | 90                               | 450                | 550                 | <52                             | 20                       |
| GTCX35-141M-R05 | 140                              | 500                | 600                 | <80                             | 20                       |
| GTCX35-151M-R05 | 150                              | 500                | 600                 | <80                             | 20                       |
| GTCX35-201M-R05 | 200                              | 600                | 700                 | <135                            | 20                       |
| GTCX35-231M-R05 | 230                              | 600                | 700                 | <135                            | 20                       |
| GTCX35-251M-R05 | 250                              | 600                | 700                 | <135                            | 20                       |
| GTCX35-261M-R05 | 260                              | 700                | 800                 | <135                            | 20                       |
| GTCX35-301M-R05 | 300                              | 800                | 900                 | <150                            | 20                       |
| GTCX35-351M-R05 | 350                              | 900                | 1000                | <150                            | 20                       |
| GTCX35-401M-R05 | 400                              | 900                | 1000                | <150                            | 20                       |
| GTCX35-421M-R05 | 420                              | 900                | 1000                | <150                            | 20                       |
| GTCX35-471M-R05 | 470                              | 1050               | 1150                | <150                            | 20                       |
| GTCX35-501M-R05 | 500                              | 1100               | 1200                | <150                            | 20                       |
| GTCX35-551M-R05 | 550                              | 1300               | 1400                | <150                            | 20                       |
| GTCX35-601M-R05 | 600                              | 1300               | 1400                | <150                            | 20                       |

### Device Surge Rating, Capacitance, Insulation Resistance, UL

| Part Number     | Impulse Discharge Current | Impulse Life                | AC Discharge Current<br>(1sec duration;<br>10 hits) | Capacitance | Insulation Resistance | UL Rating          |
|-----------------|---------------------------|-----------------------------|-----------------------------------------------------|-------------|-----------------------|--------------------|
|                 | 8x20 $\mu$ s<br>10 hits   | 10x1000 $\mu$ s<br>300 hits | @50 Hz                                              | @1Mhz       | @100V*                | UL497B<br>#E179610 |
| GTCx35-xxxM-R05 | 5kA                       | 200A                        | 5Arms                                               | <1pF        | 10,000 (M $\Omega$ )  | All Devices        |

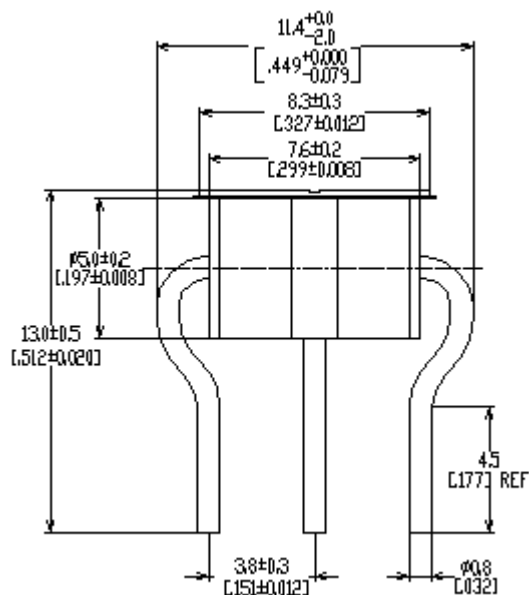
\* Devices <=150V measured @ 50V  
Devices >= 500V measured @ 250V

## GTCX35-XXXM-R05 Series

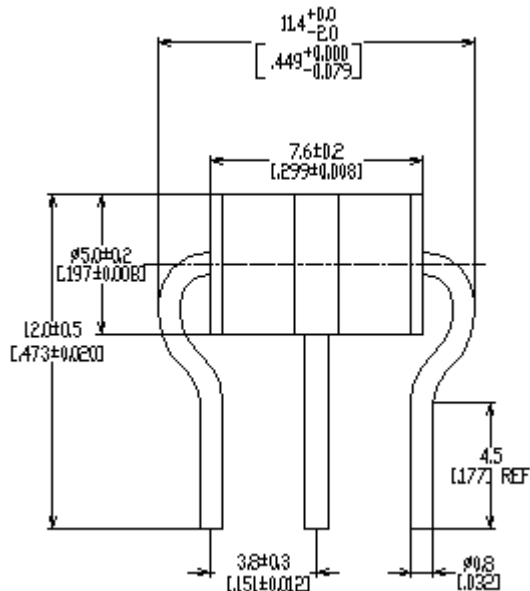
### Product Dimensions

DIMENSIONS = MILLIMETERS [INCHES]

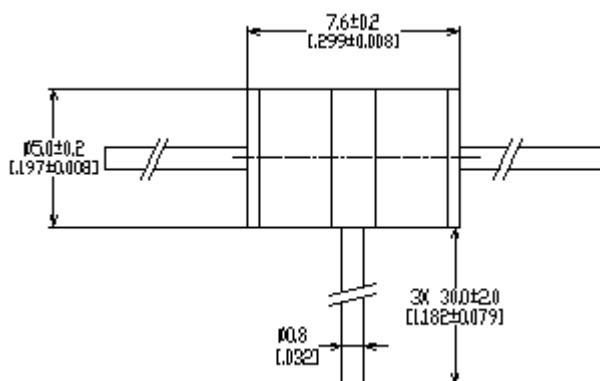
**Axial Leew-XXXM-R05-FT)**



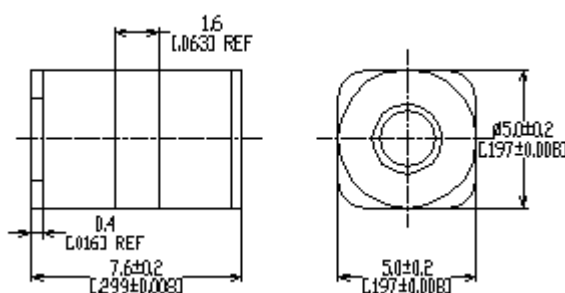
**Axial Leaded (GTCA35-XXXM-R05)**



**“T” Leaded (GTCT35-XXXM-R05)**

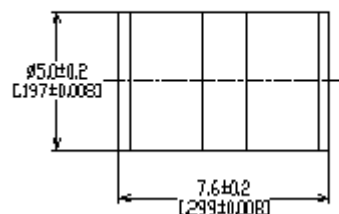


**Surface-mount (GTCS35-XXXM-R05)**



**No Leads with -FT (GTCN)**

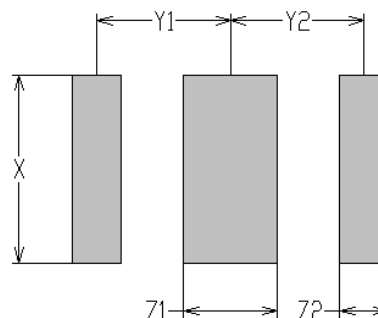
**No Leads (GTCN35XXXM-R05)**



## GTCX35-XXXM-R05 Series

### Pad Layout – Surface-mount Devices (GTCSX)

|      | X       | Y1      | Y2      | Z1      | Z2      |
|------|---------|---------|---------|---------|---------|
|      | NOM     | NOM     | NOM     | NOM     | NOM     |
| mm:  | 6.0     | 3.6     | 3.6     | 2.5     | 1.3     |
| in*: | (0.236) | (0.142) | (0.142) | (0.098) | (0.051) |



### 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, "T" 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: GTCN35-XXXM-R05

With Leads: GTCA35-XXXM-R05/GTCT35-XXXM-R05

Surface-mount: GTCS35-XXXM-R05

Surface-mount (T&R): GTCS35-XXXM-R05-2

#### Tray / Reel

100pcs (Tray)

100pcs (Tray)

100pcs (Tray)

1,000pcs (Reel)

#### Standard Package

2,500pcs

1,000pcs

2,500pcs

8,000pcs

## GTCX35-XXXM-R05 Series

### Part Numbering System

#### Example Part Number: GTCX35-351M-R05-FT

|       |                                                                                                                             |
|-------|-----------------------------------------------------------------------------------------------------------------------------|
| GT =  | Gas Tube                                                                                                                    |
| C =   | Ceramic                                                                                                                     |
| X =   | Lead Configuration: <b>N</b> = No leads; <b>A</b> = Axial Leads; <b>S</b> = Surface-mount; <b>T</b> = T Configuration Leads |
| 3 =   | 3 Electrode device                                                                                                          |
| 5 =   | 5mm 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                                                                                           |
| FT =  | With Fail-Short mechanism                                                                                                   |
| -2    | Tape and Reel                                                                                                               |

### Part Marking Reference

#### Example Part Marking: ⚡ 35 R05 GN

|       |                                                                |
|-------|----------------------------------------------------------------|
| ⚡ =   | Manufacture Mark                                               |
| 35 =  | Voltage Designator (35 = 350V)                                 |
| R05 = | Product Family Designator + Surge Current 5kA (8x20μs 10 hits) |
| GN =  | Year and Week of Manufacture                                   |



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