

Specification Status: Released

GENERAL DESCRIPTION

BENEFITS

- Helps provide overvoltage fault protection against high energy surges
- Suitable for sensitive equipment due to excellent impulse sparkover response
- Suitable for high-frequency applications
- Highly reliable performance

FEATURES

- Crowbar device with low arc-voltage
- Low capacitance and insertion loss
- High accuracy spark-over voltages for high precision designs
- Tested per ITU K.12 recommendations
- Optional Fail-Short mechanism
- Various lead configurations
- Non-radioactive materials

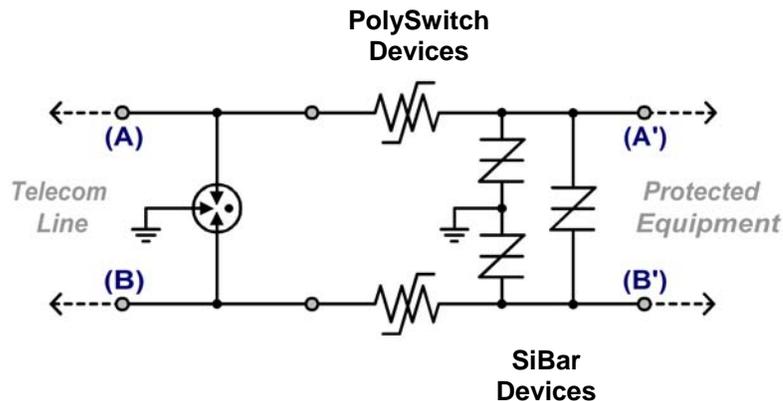
APPLICATIONS

- Telecommunications:
 - MDF modules, xDSL equipment, RF system protection
- Industrial Electronics and Consumer Electronics, such as
 - Power Supplies, Surge Protectors, Alarm systems

SYMBOL



TYPICAL APPLICATION SCHEMATIC



Gas Discharge Tube Three Electrode 7.5mm Diameter Overvoltage Protection Device

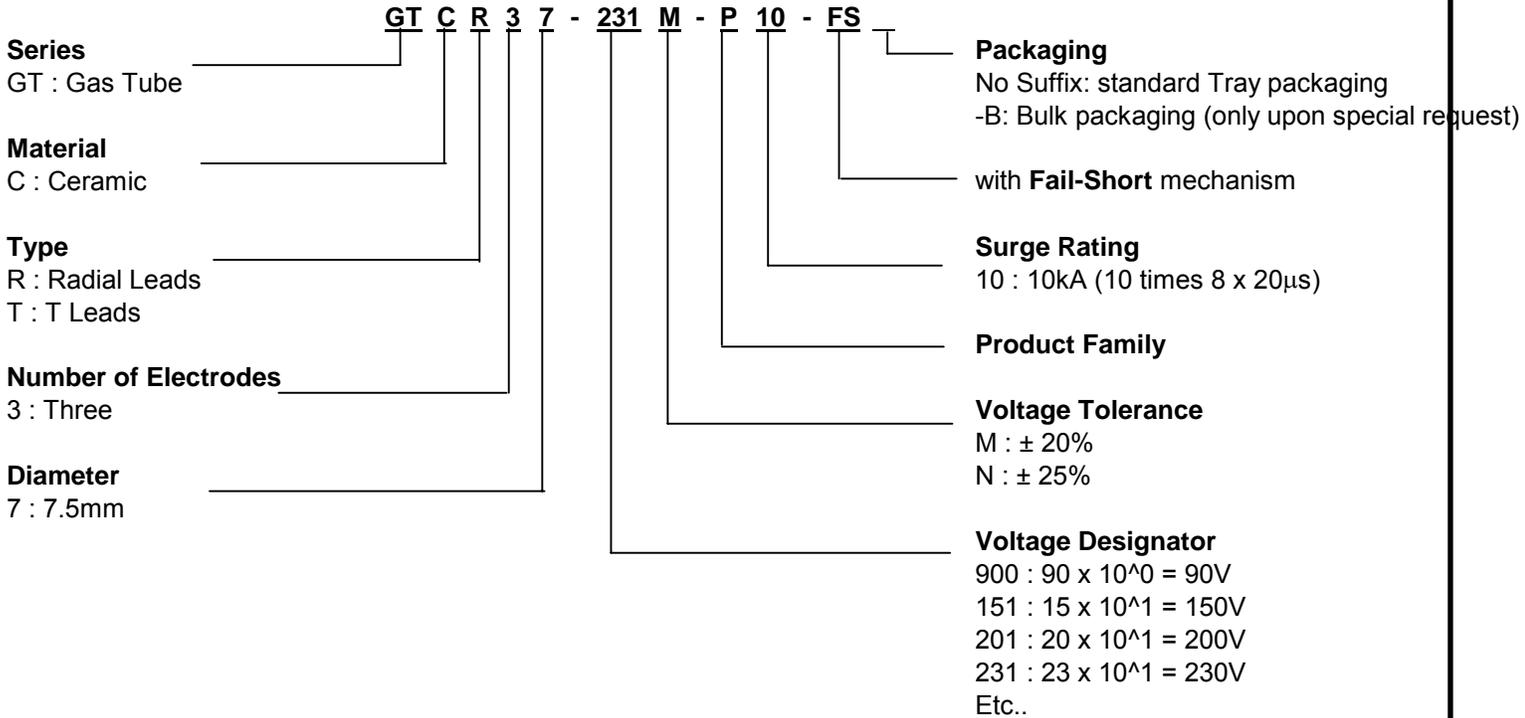
Raychem Circuit Protection Products

PRODUCT: GTCx37

DOCUMENT: SCD 25821
REV LETTER: D
REV DATE: MAY 25, 2007
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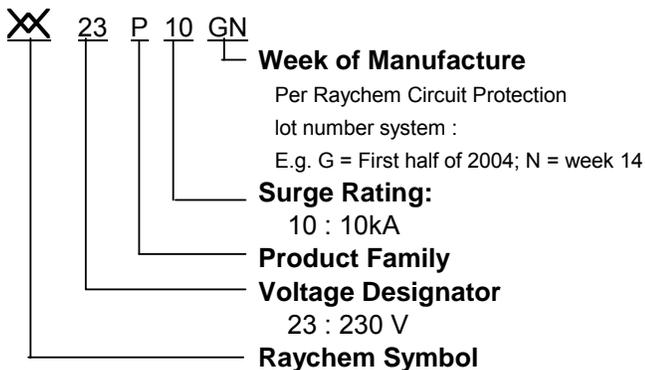
PART NUMBERING

EXAMPLE:



DEVICE MARKING

EXAMPLE : GTCR37-231M-P10



Gas Discharge Tube Three Electrode 7.5mm Diameter Overvoltage Protection Device

Raychem Circuit Protection Products

GENERAL CHARACTERISTICS

No Radioactive Materials

Storage temperature:

Devices without Fail-Short mechanism: -40°C ... +90°C

Devices with Fail-Short mechanism: -20°C ... +65°C

Operating temperature:

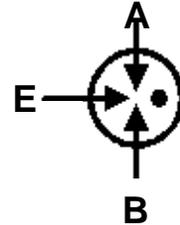
Devices without Fail-Short mechanism: -40°C ... +90°C

Devices with Fail-Short mechanism: -20°C ... +65°C

Body: Nickel Plated

Lead Material : Tin Plated

UL 497B Pending



DEVICE RATINGS AND CHARACTERISTICS

| Part Number | DC Sparkover Voltage (A-E) (B-E) | | Impulse Sparkover Voltage (A-E) (B-E) | | Insulation Resistance @ 100V _{DC} | Capacitance @ 1MHz | DC Holdover Voltage Per ITU K.12 | Impulse Life (A+B-E) 10/1000µs, 400A | Impulse Discharge Current 8/20µs (A+B-E) | | AC Discharge Current, 50Hz (A+B-E) | |
|--|----------------------------------|-----------|---------------------------------------|-------------------------|--|--------------------|----------------------------------|--------------------------------------|--|---|------------------------------------|-------------------------------|
| | @ 100V/s | @ 100V/µs | @ 1kV/µs | | | | | | Single Hit | Repeat 10 times (5 times each polarity) | Single Hit, 9 Cycles | Repeat 10 times (1s interval) |
| GTCR37-900M-P10 GTCT37-900M-P10-FS GTCT37-900M-P10 | 90V ± 20% | ≤ 700V | ≤ 850V | ≥ 10,000MΩ ¹ | ≤ 3.0pF | ≤ 52V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-151M-P10 GTCT37-151M-P10-FS GTCT37-151M-P10 | 150V ± 20% | ≤ 700V | ≤ 850V | ≥ 10,000MΩ ¹ | ≤ 3.0pF | ≤ 52V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-201N-P1 GTCT37-201N-P10-FS GTCT37-201N-P10 | 200V ± 25% | ≤ 500V | ≤ 650V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 135V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-231M-P10 GTCT37-231M-P10-FS GTCT37-231M-P10 | 230V ± 20% | ≤ 500V | ≤ 650V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 135V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-251M-P10 GTCT37-251M-P10-FS GTCT37-251M-P10 | 250V ± 20% | ≤ 500V | ≤ 650V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 135V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-261M-P10 GTCT37-261M-P10-FS GTCT37-261M-P10 | 260V ± 20% | ≤ 500V | ≤ 650V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 135V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-301M-P10 GTCT37-301M-P10-FS GTCT37-301M-P10 | 300V ± 20% | ≤ 600V | ≤ 750V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 135V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-351M-P10 GTCT37-351M-P10-FS GTCT37-351M-P10 | 350V ± 20% | ≤ 600V | ≤ 750V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 150V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-401M-P10 GTCT37-401M-P10-FS GTCT37-401M-P10 | 400V ± 20% | ≤ 700V | ≤ 850V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 150V | 300 times | 20kA | 10kA | 130A | 10A | |
| GTCR37-551M-P10 GTCT37-551M-P10-FS GTCT37-551M-P10 | 550V ± 20% | ≤ 850V | ≤ 1,000V | ≥ 10,000MΩ | ≤ 3.0pF | ≤ 150V | 300 times | 20kA | 10kA | 130A | 10A | |

Note 1. Insulation Resistance measured at 50 V_{DC}.

Gas Discharge Tube Three Electrode 7.5mm Diameter Overvoltage Protection Device

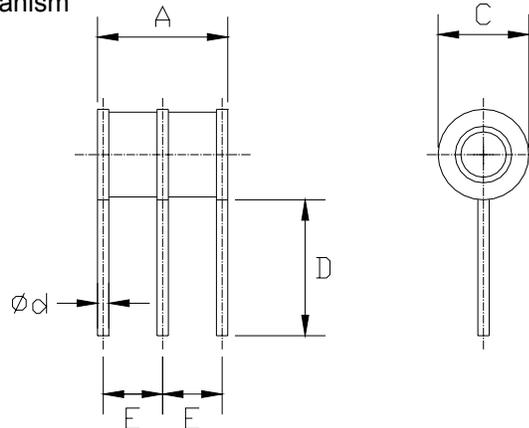
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DIMENSIONS

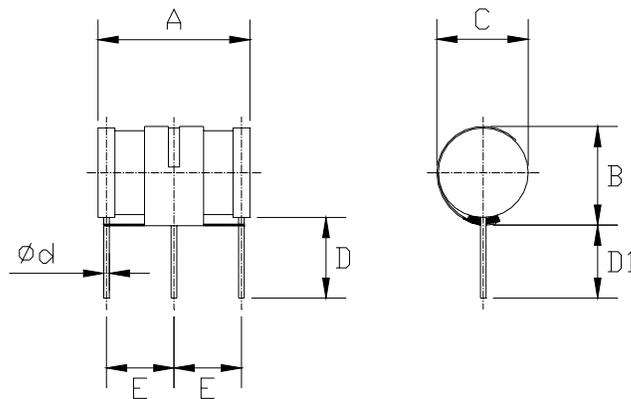
Radial Leads, no Fail-Short mechanism
(GTCR37-xxxx-P10)



| A | | C | | D | | E | | Ød | |
|------|-----|------|------|------|------|------|------|------|------|
| MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | NOM | |
| mm: | -- | 12.0 | 7.3 | 7.7 | 6.5 | 7.5 | 4.1 | 4.7 | 1.0 |
| in*: | -- | 0.47 | 0.29 | 0.30 | 0.26 | 0.30 | 0.16 | 0.19 | 0.04 |

* Rounded off approximation

Radial Leads, with Fail-Short mechanism
(GTCR37-xxxx-P10-FS)



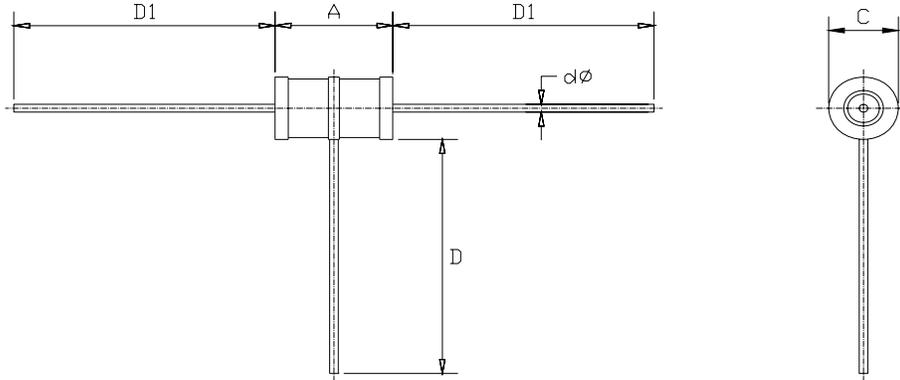
| A | | B | | C | | D | | D1 | | E | | Ød | |
|------|-----|------|-----|------|-----|------|------|------|------|-----|------|------|------|
| MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | NOM | |
| mm: | -- | 12.0 | -- | 9.3 | -- | 8.0 | 6.5 | 7.5 | 6.0 | -- | 4.1 | 4.7 | 1.0 |
| in*: | -- | 0.47 | -- | 0.37 | -- | 0.32 | 0.26 | 0.30 | 0.24 | -- | 0.16 | 0.19 | 0.04 |

* Rounded off approximation

**Gas Discharge Tube
 Three Electrode 7.5mm Diameter
 Overvoltage Protection Device**

Raychem Circuit Protection Products

T Leads, no Fail-Short mechanism
 (GTCT37)



| | A | | D | | D1 | | $\varnothing d$ |
|------|-----|------|------|------|------|------|-----------------|
| | MIN | MAX | MIN | MAX | MIN | MAX | NOM |
| mm: | -- | 12.0 | 23.0 | 29.0 | 28.0 | 32.0 | 1.0 |
| in*: | -- | 0.47 | 0.91 | 1.14 | 1.10 | 1.26 | 0.04 |

approximation

* Rounded off

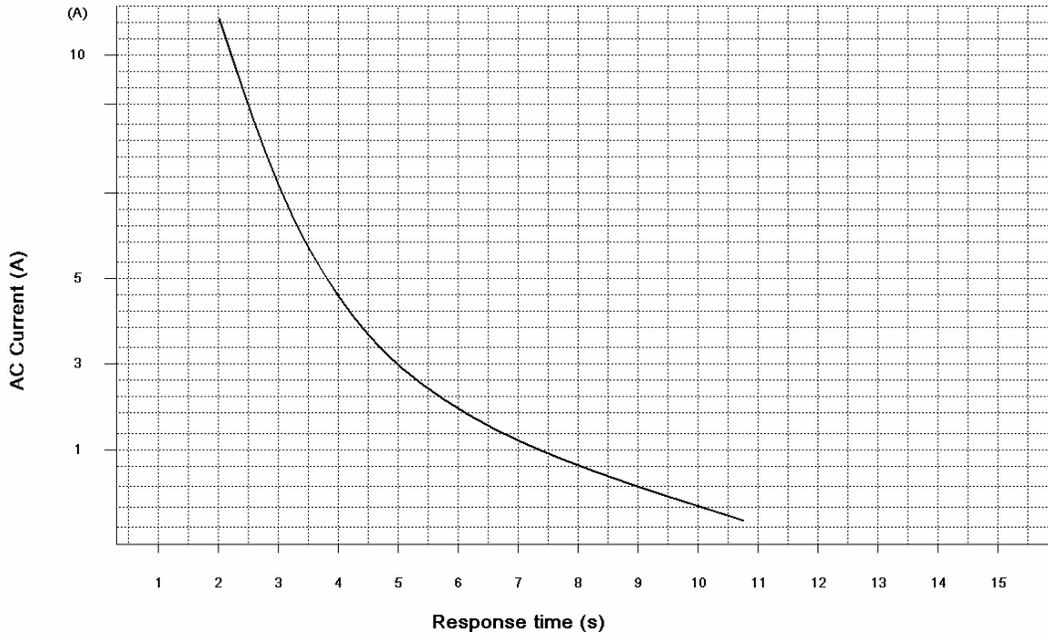
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FAIL-SHORT MECHANISM RESPONSE TIME (Graph represents typical values)



Note: Both electrodes simultaneously powered, each with the AC current value in the graph

PACKAGING

| Packaging | Bulk* (vacuum bags) | Tray | Standard Box |
|-----------|-------------------------|------|--------------|
| Quantity | 200 | 100 | 1,000** |

* Standard packaging is in trays.
Bulk packaging is only available upon request.

** 5 bags or 10 trays

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