

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
PAGE NO.: 1 OF 6

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

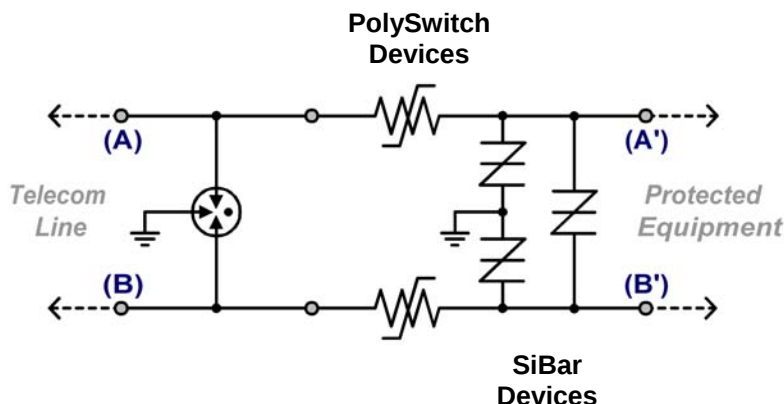
APPLICATIONS

- 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

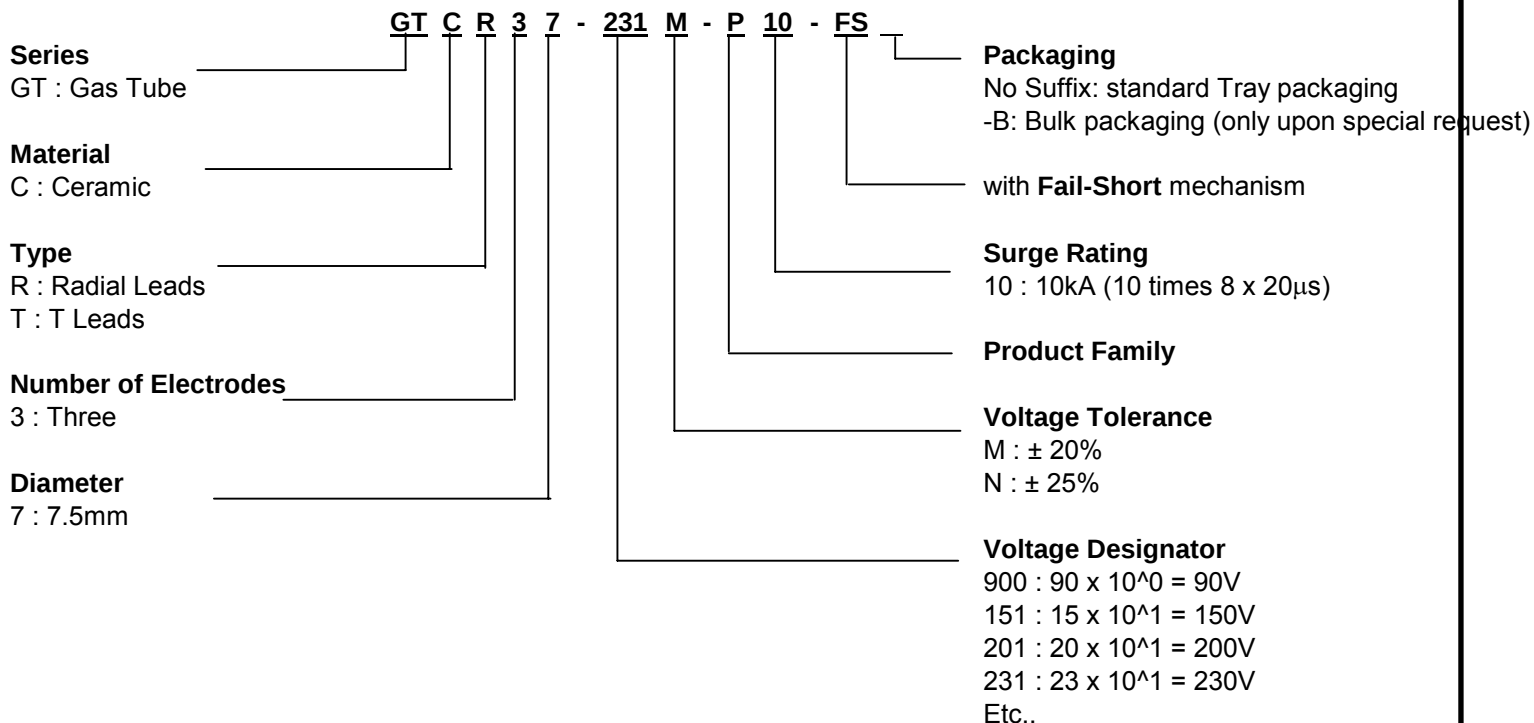
Raychem Circuit Protection Products

PRODUCT: GTCx37

DOCUMENT: SCD 25821
REV LETTER: D
REV DATE: MAY 25, 2007
PAGE NO.: 2 OF 6

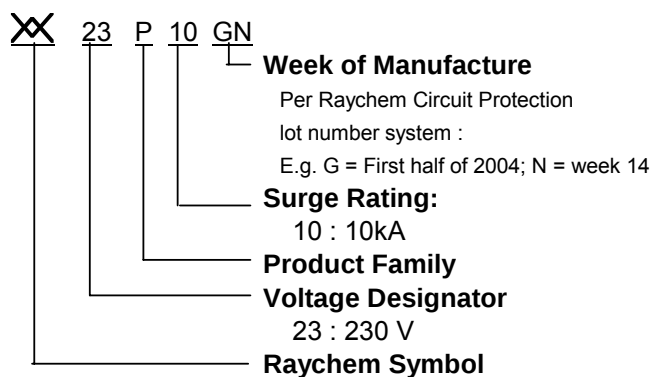
PART NUMBERING

EXAMPLE:



DEVICE MARKING

EXAMPLE : GTCR37-231M-P10



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
PAGE NO.: 3 OF 6

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:

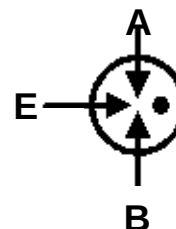
Devices without Fail-Short mechanism: -40°C ... +90°C

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

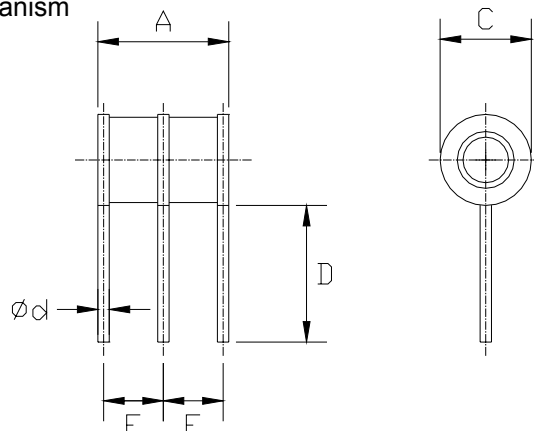
Raychem Circuit Protection Products

PRODUCT: GTCx37

DOCUMENT: SCD 25821
REV LETTER: D
REV DATE: MAY 25, 2007
PAGE NO.: 4 OF 6

DIMENSIONS

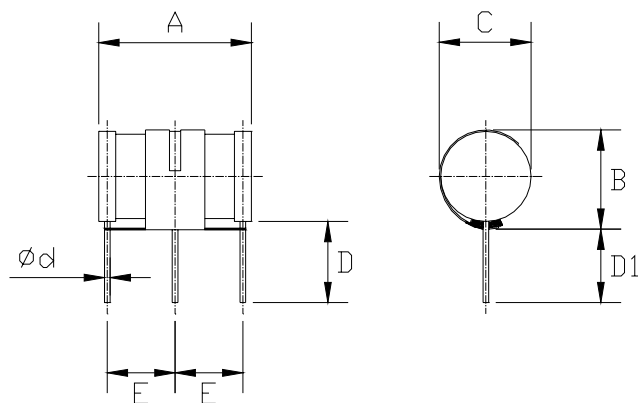
Radial Leads, no Fail-Short mechanism
(GTCR37-xxxx-P10)



	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

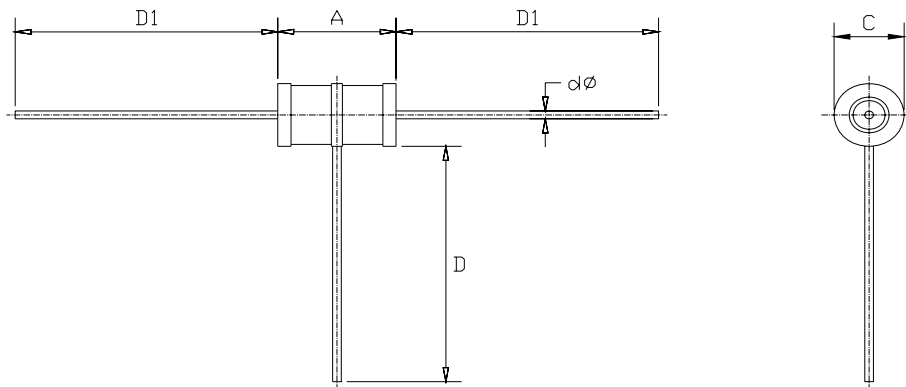
Gas Discharge Tube
Three Electrode 7.5mm Diameter
Overvoltage Protection Device

Raychem Circuit Protection Products

PRODUCT: GTCx37

DOCUMENT: SCD 25821
REV LETTER: D
REV DATE: MAY 25, 2007
PAGE NO.: 5 OF 6

T Leads, no Fail-Short mechanism
(GTCT37)



A		D		D1		Ød
MIN	MAX	MIN	MAX	MIN	MAX	NOM
--	12.0	23.0	29.0	28.0	32.0	1.0
--	0.47	0.91	1.14	1.10	1.26	0.04

mm:
in*:

approximation

* Rounded off

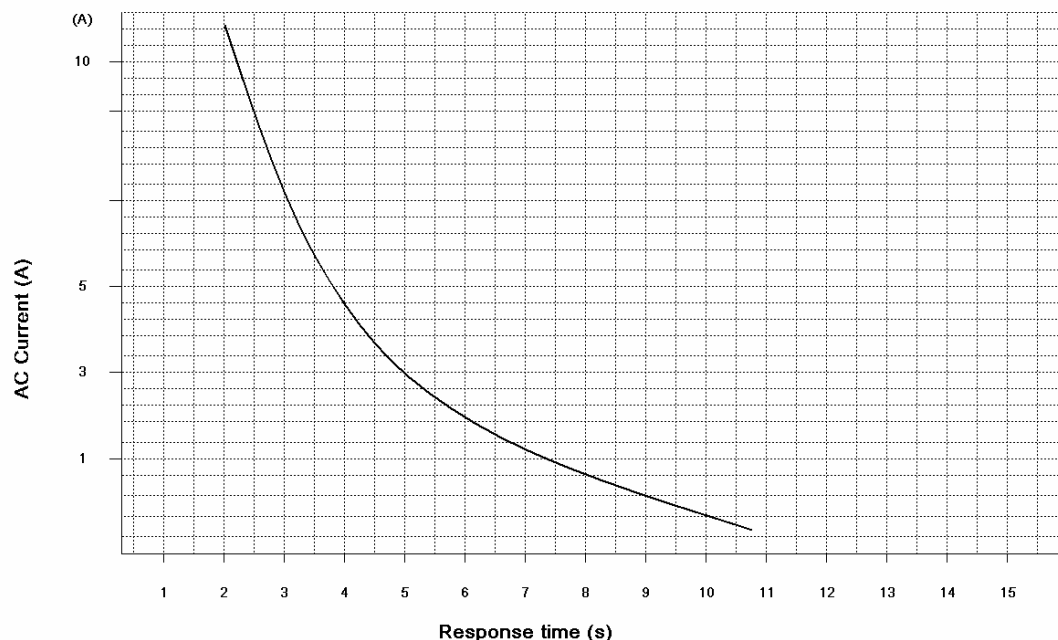
Gas Discharge Tube Three Electrode 7.5mm Diameter Overvoltage Protection Device

Raychem Circuit Protection Products

PRODUCT: GTCx37

DOCUMENT: SCD 25821
REV LETTER: D
REV DATE: MAY 25, 2007
PAGE NO.: 6 OF 6

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

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of each product for their applications. Tyco Electronics Corporation assumes no responsibility for the use of its product or for any infringement of patents or other rights of third parties resulting from the use of its product. No license is granted by implication or otherwise under any patent or proprietary right of Tyco Electronics except the right to use such product for the purpose for which it is sold. Tyco Electronics 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 Tyco Electronics, Tyco Electronics 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. Tyco Electronics' only obligations are those in the Tyco Electronics Standard Terms and Conditions of Sale and in no case will Tyco Electronics be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.