Tyco Electronics

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Menlo Park, CA 94025-1164
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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

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

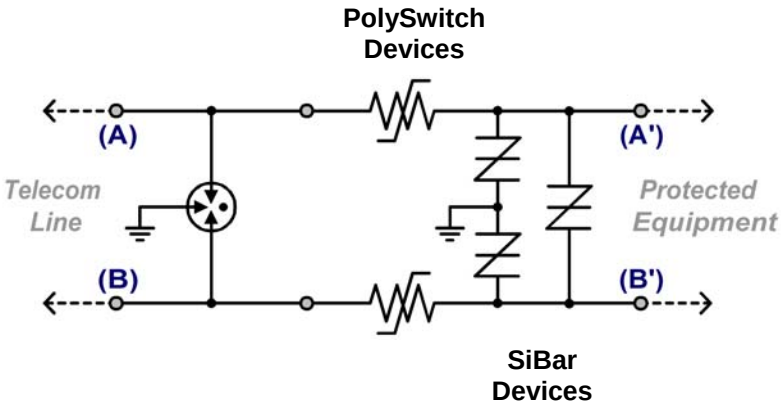
- Crowbar device with low arc-voltage
- Low capacitance and insertion loss
- High accuracy spark-over voltages for high precision designs
- Tested per ITU K.12 recommendations
- Optional Fail-Short mechanism
- Various lead configurations
- Non-radioactive materials

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



PART NUMBERING

EXAMPLE:

GT C R 3 7 - 231 M - P 10 - FS

Series
GT : Gas Tube

Material
C : Ceramic

Type
R : Radial Leads
T : T Leads

Number of Electrodes
3 : Three

Diameter
7 : 7.5mm

Packaging
No Suffix: standard Tray packaging
-B: Bulk packaging (only upon special request)

with **Fail-Short** mechanism

Surge Rating
10 : 10kA (10 times 8 x 20µs)

Product Family

Voltage Tolerance
M : ± 20%
N : ± 25%

Voltage Designator
900 : 90 x 10^0 = 90V
151 : 15 x 10^1 = 150V
201 : 20 x 10^1 = 200V
231 : 23 x 10^1 = 230V
Etc..

DEVICE MARKING

EXAMPLE : GTCR37-231M-P10

XX 23 P 10 GN

Week of Manufacture
Per Raychem Circuit Protection
lot number system :
E.g. G = First half of 2004; N = week 14

Surge Rating:
10 : 10kA

Product Family

Voltage Designator
23 : 230 V

Raychem Symbol

GENERAL CHARACTERISTICS

No Radioactive Materials

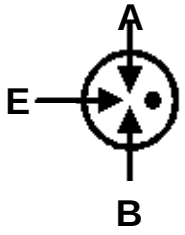
Storage temperature:
Devices without Fail-Short mechanism: -40°C … +90°C
Devices with Fail-Short mechanism: -20°C … +65°C

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



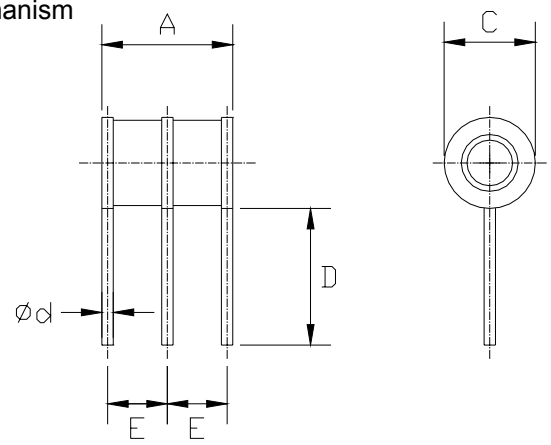
DEVICE RATINGS AND CHARACTERISTICS

	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)	
Part Number	@ 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}.

DIMENSIONS

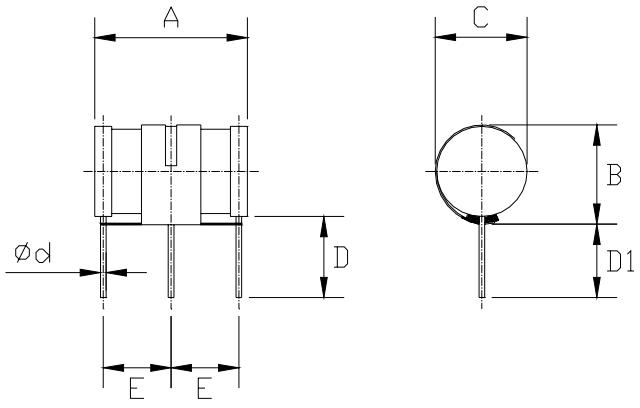
Radial Leads, no Fail-Short mechanism
(GTCR37-xxxx-P10)



	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

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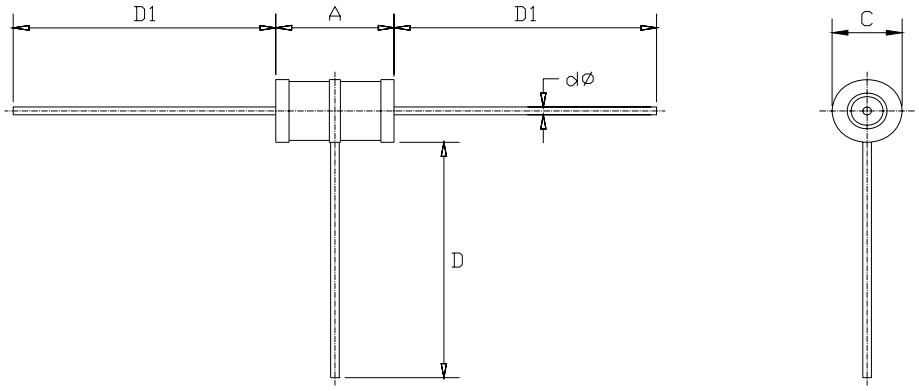
(GTCT37)

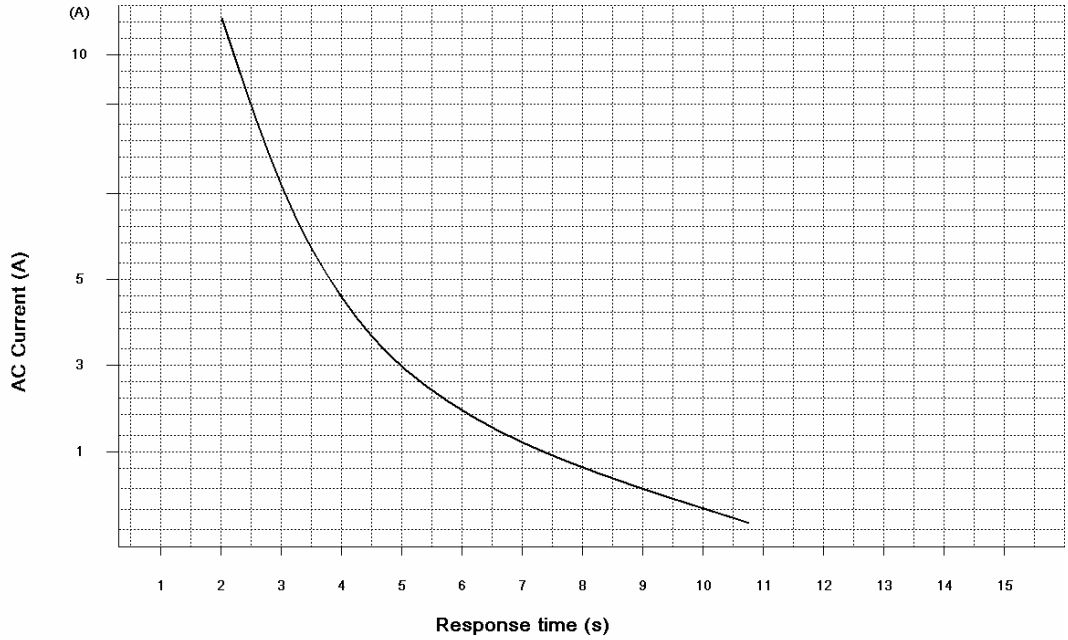


	A		D		D1		Ød
	MIN	MAX	MIN	MAX	MIN	MAX	NOM
mm:	--	12.0	23.0	29.0	28.0	32.0	1.0
in*:	--	0.47	0.91	1.14	1.10	1.26	0.04

approximation

* Rounded off

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**