

**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**

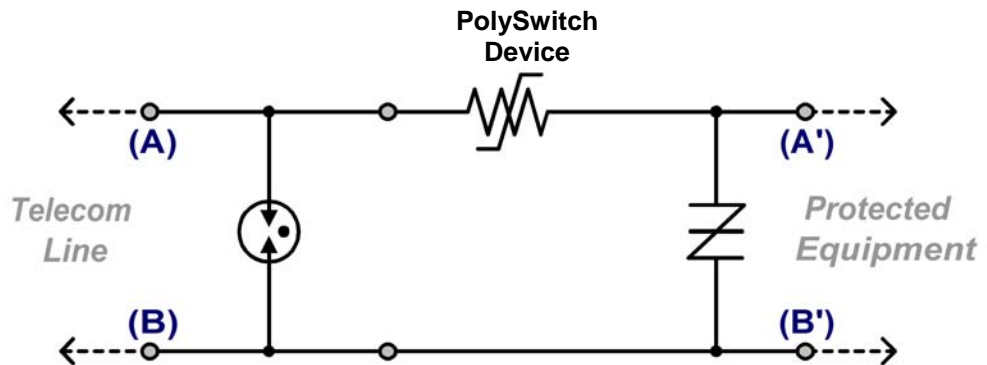
- Crowbar device with low arc-voltage
- Low capacitance and insertion loss
- High accuracy spark-over voltages for high precision designs
- Tested per ITU K.12 recommendations
- Non-radioactive materials

**APPLICATIONS**

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

**SYMBOL**  
**APPLICATION SCHEMATIC**

**TYPICAL**



SiBar  
Device

## Gas Discharge Tube Standard Two Electrode Series Overvoltage Protection Device

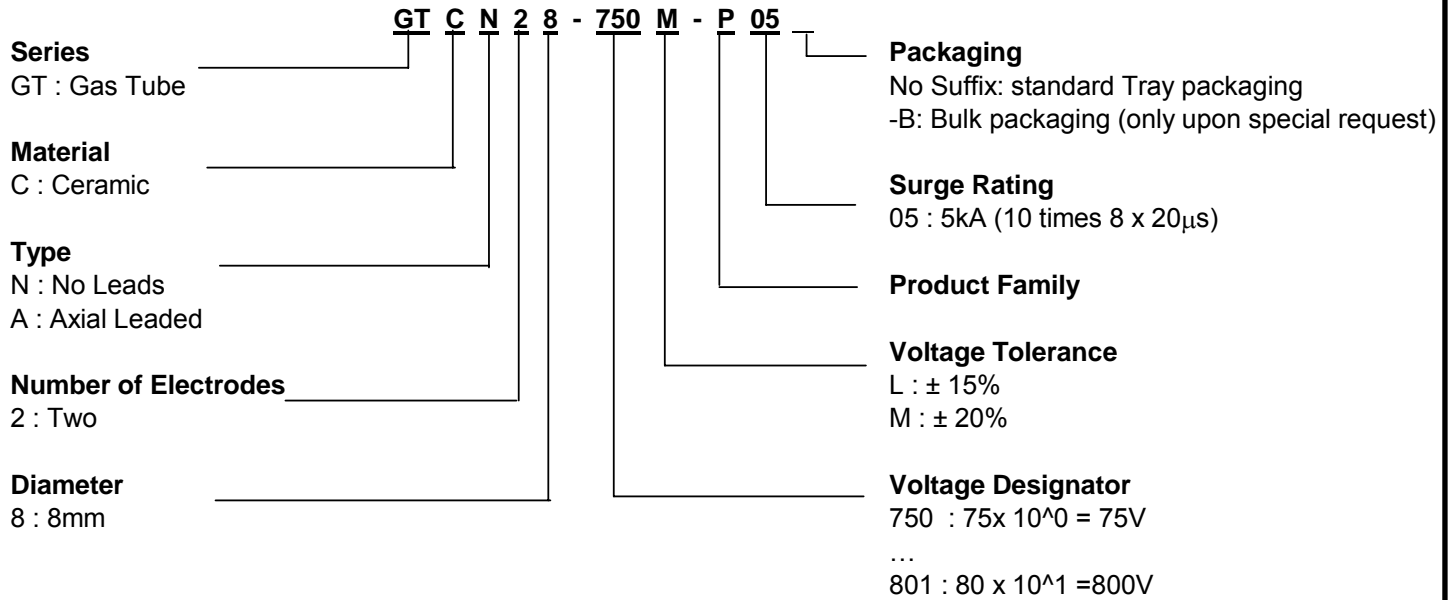
*Raychem Circuit Protection Products*

**PRODUCT: GTCx28-xxxx-P05**

DOCUMENT: SCD 25819  
REV LETTER: D  
REV DATE: JULY 7, 2008  
PAGE NO.: 2 OF 5

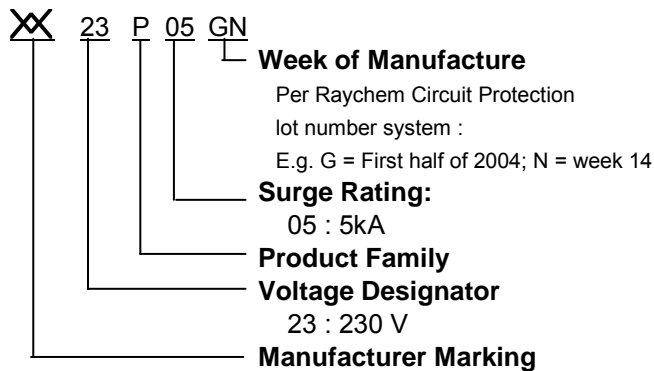
### PART NUMBERING

**EXAMPLE:**



### DEVICE MARKING

**EXAMPLE : GTCA28-231L-P05:**



## Gas Discharge Tube Standard Two Electrode Series Overvoltage Protection Device

*Raychem Circuit Protection Products*

### GENERAL CHARACTERISTICS

No Radioactive Material

Storage temperature: -40°C ... +90°C

Operating temperature: -40°C ... + 90°C

Body: Nickel Plated

Leads: Tin Plated

UL 497B Pending



### MATERIALS INFORMATION

RoHS Compliant

ELV Compliant

Directive 2002/95/EC  
Compliant

Directive 2000/53/EC  
Compliant

### DEVICE RATINGS AND CHARACTERISTICS

Part Number	DC Sparkover Voltage	Impulse Sparkover Voltage		Insulation Resistance	Capacitance	DC Holdover Voltage	Impulse Life	Impulse Discharge Current 8/20 $\mu$ s		AC Discharge Current, 50 Hz	
	@ 100V/s	@ 100V/ $\mu$ s	@ 1kV/ $\mu$ s	@ 100V	@ 1MHz	Per ITUK.12	10/1000 $\mu$ s, 500A	Single Hit	Repeat 10 times (5 times each polarity)	Single Hit, 9 Cycles	Repeat (1s interval)
GTCN28-750M-P05 GTCA28-750M-P05	75V $\pm$ 20%	$\leq$ 500V	$\leq$ 700V	$\geq$ 10,000M $\Omega$ <sup>1</sup>	$\leq$ 1.0pF	$\leq$ 52V	300 times	10kA	5kA	65A	10A, 5 times
GTCN28-900M-P05 GTCA28-900M-P05	90V $\pm$ 20%	$\leq$ 500V	$\leq$ 700V	$\geq$ 10,000M $\Omega$ <sup>1</sup>	$\leq$ 1.0pF	$\leq$ 52V	300 times	10kA	5kA	65A	10A, 5 times
GTCN28-151M-P05 GTCA28-151M-P05	150V $\pm$ 20%	$\leq$ 500V	$\leq$ 700V	$\geq$ 10,000M $\Omega$ <sup>1</sup>	$\leq$ 1.0pF	$\leq$ 80V	300 times	10kA	5kA	65A	10A, 5 times
GTCN28-231L-P05 GTCA28-231L-P05	230V $\pm$ 15%	$\leq$ 600V	$\leq$ 750V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	$\leq$ 135V	300 times	10kA	5kA	65A	10A, 5 times
GTCN28-251L-P05 GTCA28-251L-P05	250V $\pm$ 15%	$\leq$ 600V	$\leq$ 800V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	$\leq$ 135V	300 times	10kA	5kA	65A	10A, 10times
GTCN28-301L-P05 GTCA28-301L-P05	300V $\pm$ 15%	$\leq$ 700V	$\leq$ 850V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	$\leq$ 150V	300 times	10kA	5kA	65A	10A, 10times
GTCN28-351L-P05 GTCA28-351L-P05	350V $\pm$ 15%	$\leq$ 700V	$\leq$ 850V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	$\leq$ 150V	300 times	10kA	5kA	65A	10A, 10times
GTCN28-401L-P05 GTCA28-401L-P05	400V $\pm$ 15%	$\leq$ 700V	$\leq$ 850V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	$\leq$ 150V	300 times	10kA	5kA	65A	10A, 10times
GTCN28-471L-P05 GTCA28-471L-P05	470V $\pm$ 15%	$\leq$ 700V	$\leq$ 850V	$\geq$ 10,000M $\Omega$ <sup>2</sup>	$\leq$ 1.0pF	$\leq$ 150V	300 times	10kA	5kA	65A	10A, 10times
GTCN28-601L-P05 GTCA28-601L-P05	600V $\pm$ 15%	$\leq$ 800V	$\leq$ 1,000V	$\geq$ 10,000M $\Omega$ <sup>2</sup>	$\leq$ 1.0pF	$\leq$ 150V	300 times	10kA	5kA	65A	10A, 10times
GTCN28-801L-P05 GTCA28-801L-P05	800V $\pm$ 15%	$\leq$ 1,000V	$\leq$ 1,200V	$\geq$ 10,000M $\Omega$ <sup>2</sup>	$\leq$ 1.0pF	$\leq$ 150V	300 times	10kA	5kA	65A	10A, 10times

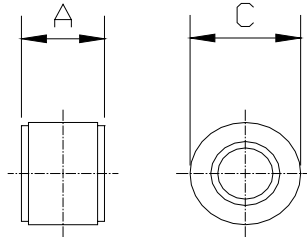
Note 1. Insulation Resistance at 50 V<sub>DC</sub>.  
Note 2. Insulation Resistance at 250 V<sub>DC</sub>.

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Standard Two Electrode Series  
Overvoltage Protection Device**

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**DIMENSIONS**

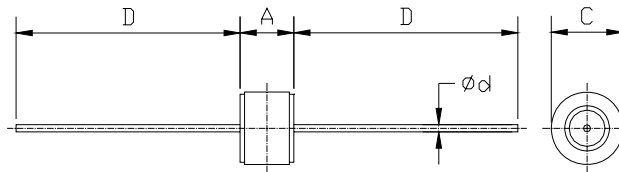
No Leads (GTCN28-xxxx-P05)



	A		C	
	MIN	MAX	MIN	MAX
mm:	5.7	6.3	7.7	8.3
in*:	0.22	0.25	0.30	0.33

\*Rounded off approximation

Axial Leads (GTCA28-xxxx-P05)



	A		C		D		$\varnothing d$
	MIN	MAX	MIN	MAX	MIN	MAX	NOM
mm:	5.7	6.3	7.7	8.3	28.0	32.0	0.8
in*:	0.22	0.25	0.30	0.33	1.10	1.26	0.03

\* Rounded off approximation

**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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