



308 Constitution Drive  
Menlo Park, CA 94025-1164  
Phone: 800-227-4856  
www.circuitprotection.com

# Gas Discharge Tube High Voltage Two Electrode Series Overvoltage Protection Device

*Raychem Circuit Protection Products*

PRODUCT: GTCA28-xx2x-P0x

DOCUMENT: SCD 25818  
REV LETTER: J  
REV DATE: 15-Apr-11  
PAGE NO.: 1 OF 5

## 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
- Non-radioactive materials

### APPLICATIONS

- Industrial Electronics and Commercial Electronics, such as  
- Power Supplies, Surge Protectors, Alarm systems

### SYMBOL





308 Constitution Drive  
 Menlo Park, CA 94025-1164  
 Phone: 800-227-4856  
 www.circuitprotection.com

## Gas Discharge Tube High Voltage Two Electrode Series Overvoltage Protection Device

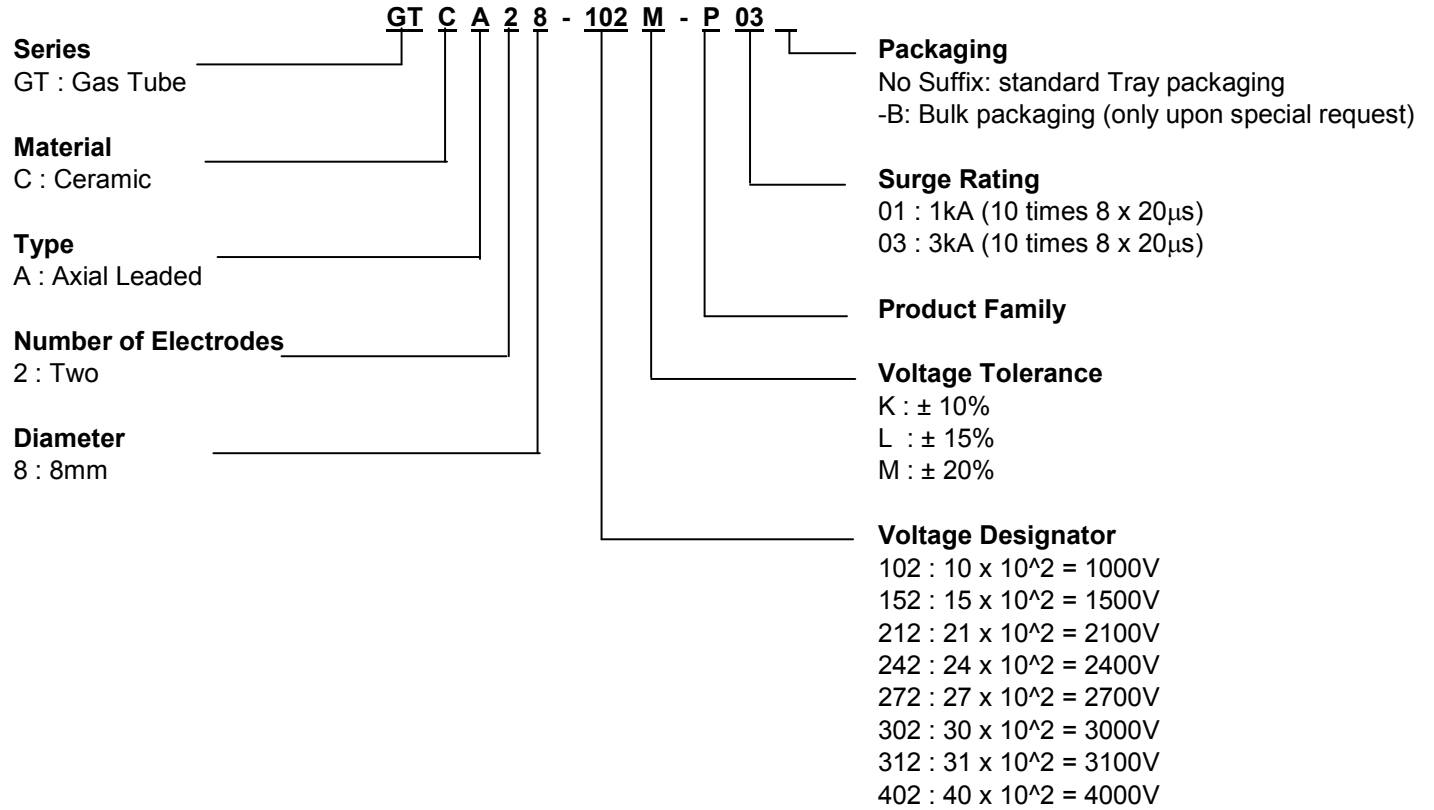
*Raychem Circuit Protection Products*

**PRODUCT: GTCA28-xx2x-P0x**

DOCUMENT: SCD 25818  
 REV LETTER: J  
 REV DATE: 15-Apr-11  
 PAGE NO.: 2 OF 5

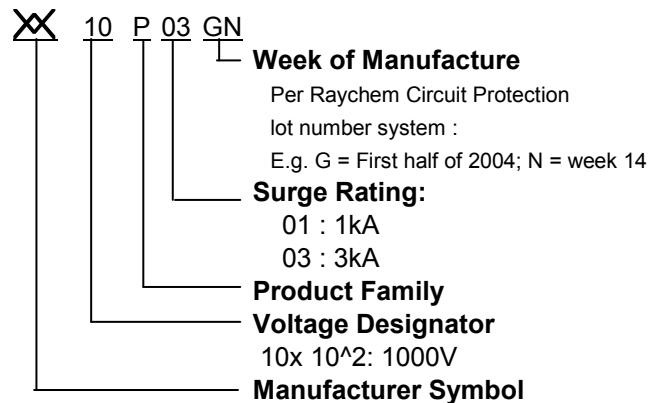
### PART NUMBERING

**EXAMPLE:**



### DEVICE MARKING

**EXAMPLE : GTCA28-102M-P03**





308 Constitution Drive  
Menlo Park, CA 94025-1164  
Phone: 800-227-4856  
www.circuitprotection.com

## Gas Discharge Tube High Voltage Two Electrode Series Overvoltage Protection Device

*Raychem Circuit Protection Products*

**PRODUCT: GTCA28-xx2x-P0x**

DOCUMENT: SCD 25818  
REV LETTER: J  
REV DATE: 15-Apr-11  
PAGE NO.: 3 OF 5

### GENERAL CHARACTERISTICS

No Radioactive Material

Storage temperature: -40°C ... +90°C

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

Body: Nickel Plated

Leads: Tin Plated

### 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	Impulse Life	Impulse Discharge Current 8/20 $\mu$ s		AC Discharge Current, 50 Hz	
	@ 100V/s	@ 100V / $\mu$ s	@ 1000V <sub>DC</sub>	@ 1MHz	10/1000 $\mu$ s, 500A	Single Hit	Repeat 10 times (5 times - each polarity)	Single Hit, 9 Cycles	Repeat 10 times (1s interval)
GTCA28-102M-P03	1,000V $\pm$ 20%	$\leq$ 1,500V	$\geq$ 10,000M $\Omega$ <sup>1</sup>	$\leq$ 1.0pF	200 times	10kA	3kA	5A	1A
GTCA28-152L-P03	1,500V $\pm$ 15%	$\leq$ 2,200V	$\geq$ 10,000M $\Omega$ <sup>2</sup>	$\leq$ 1.0pF	10 times	10kA	3kA	5A	1A
GTCA28-212M-P03	2,100V $\pm$ 20%	$\leq$ 2,700V	$\geq$ 10,000M $\Omega$ <sup>2</sup>	$\leq$ 1.0pF	10 times	10kA	3kA	5A	1A
GTCA28-242M-P03	2,400V $\pm$ 20%	$\leq$ 3,000V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	10 times	10kA	3kA	5A	1A
GTCA28-272L-P03	2,700 $\pm$ 15% <sup>3</sup>	$\leq$ 3,700V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	300 times <sup>4</sup>	10kA	3kA	N/A	N/A
GTCA28-302M-P01	3,000V $\pm$ 20%	$\leq$ 4,000V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	10 times	10kA	1kA	5A	1A
GTCA28-312L-P03	3,100V $\pm$ 15% <sup>3</sup>	$\leq$ 3,700V <sup>5</sup>	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	300 times <sup>4</sup>	10kA	3kA	N/A	N/A
GTCA28-402M-P01	4,000V $\pm$ 20%	$\leq$ 5,000V	$\geq$ 10,000M $\Omega$	$\leq$ 1.0pF	10 times	10kA	1kA	5A	1A

Note 1. Resistance measured at 250 V<sub>DC</sub>.

Note 2. Resistance measured at 500 V<sub>DC</sub>.

Note 3. DC Spark over Voltage Measured at 5kV/s.

Note 4. Measured with an 8/20 $\mu$ s, 100A impulse.

Note 5. Measured with 1kV/ $\mu$ s.



308 Constitution Drive  
Menlo Park, CA 94025-1164  
Phone: 800-227-4856  
www.circuitprotection.com

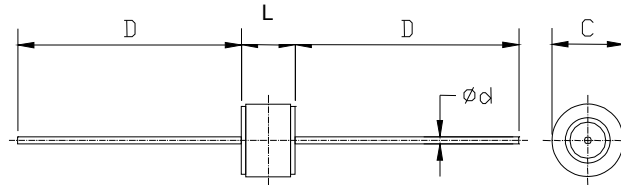
## Gas Discharge Tube High Voltage Two Electrode Series Overvoltage Protection Device

**Raychem Circuit Protection Products**

**PRODUCT: GTCA28-xx2x-P0x**

DOCUMENT: SCD 25818  
REV LETTER: J  
REV DATE: 15-Apr-11  
PAGE NO.: 4 OF 5

### DIMENSIONS



Part Number		L		C		D		Ød
		MIN	MAX	MIN	MAX	MIN	MAX	NOM
GTCA28-102M-P03	mm	7.7	8.3	7.7	8.3	28	32	0.8
	in*	0.3	0.33	0.3	0.33	1.1	1.26	0.03
GTCA28-152L-P03	mm	8.2	8.8	7.7	8.3	28	32	0.8
	in*	0.32	0.35	0.3	0.33	1.1	1.26	0.03
GTCA28-212M-P03	mm	8.2	8.8	7.7	8.3	28	32	0.8
	in*	0.32	0.35	0.3	0.33	1.1	1.26	0.03
GTCA28-242M-P03	mm	8.2	8.8	7.7	8.3	28	32	0.8
	in*	0.32	0.35	0.3	0.33	1.1	1.26	0.03
GTCA28-272L-P03	mm	8.5	9.1	7.7	8.3	28	32	0.8
	in*	0.33	0.36	0.3	0.33	1.1	1.26	0.03
GTCA28-312L-P03	mm	8.5	9.1	7.7	8.3	28	32	0.8
	in*	0.33	0.36	0.3	0.33	1.1	1.26	0.03
GTCA28-302M-P01	mm	8.2	8.8	7.7	8.3	28	32	0.8
	in*	0.32	0.35	0.3	0.33	1.1	1.26	0.03
GTCA28-402M-P01	mm	8.2	8.8	7.7	8.3	28	32	0.8
	in*	0.32	0.35	0.3	0.33	1.1	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

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. TE Connectivity 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 TE Connectivity, TE Connectivity 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. TE Connectivity expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. TE Connectivity only obligations are those in the TE Connectivity Standard Terms and Conditions of Sale and in no case will TE Connectivity be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.