

## Gas Discharge Tubes GTCS23-XXXM-R01-2 Series

Littelfuse Circuit Protection 3mm 2Pole SMD type GDTs (ceramic gas discharge tubes), are commonly used to help protect sensitive telecom equipment such as communication lines, signal lines and data transmission lines from damage caused by transient surge voltages that typically result from lightning strikes and equipment switching operations.

Littelfuse Circuit Protection 3mm SMD type GDTs offer excellent surge protection characteristics, low capacitance and a broad array of breakover voltage levels, making them suitable for applications such as high data-rate telecom communication network protection (e.g. ADSL, VDSL).



### Benefits:

- Compact, small form factor suitable for efficient assembly
- Suitable for high-frequency applications

### Features:

- 2Poles, 3mm devices
- Broad voltage range from 75V-400V
- Form factor: surface mount
- Low capacitance and insertion loss
- Referring to ITUT K.20 and ITUT K.21
- UL 497B recognized
- RoHS compliant
- Devices tested per ITU K.12 recommendations
- Non-radioactive materials

### Applications:

- Telecommunications, RF system protection, CATV Modem, Hub protection, Security Systems, Data acquisition

## GTCS23-XXXM-R01-2 Series

### Device Voltage Ratings

Part Number	DC Sparkover	Impulse Sparkover Voltage
	@100V/s ±20% Tolerance (V)	@1000 V/μs (V)
GTCS23-750M-R01-2*	75	600
GTCS23-900M-R01-2	90	600
GTCS23-141M-R01-2	140	600
GTCS23-151M-R01-2	150	600
GTCS23-201M-R01-2	200	700
GTCS23-231M-R01-2	230	700
GTCS23-301M-R01-2	300	900
GTCS23-351M-R01-2	350	1000
GTCS23-401M-R01-2	400	1000

\*DCSO 60-105

Part Marking : Not Applicable

### Device Surge Rating, Capacitance, Insulation Resistance, UL

Part Number	Insulation Resistance	Capacitance	Impulse Discharge Current 8/20μs		Impulse Withstanding Voltage 10/700μs	UL Rating
			10 hits (5hits each polarity)	300 hits (150hits each polarity)		
	@100V <sub>DC</sub> *	@1Mhz			10 hits (5 times each polarity)	UL497B #E179610
GTCS23-xxxM-R01-2	≥ 1,000 (MΩ)	<0.5pF	1kA	100A	4kV	All Devices

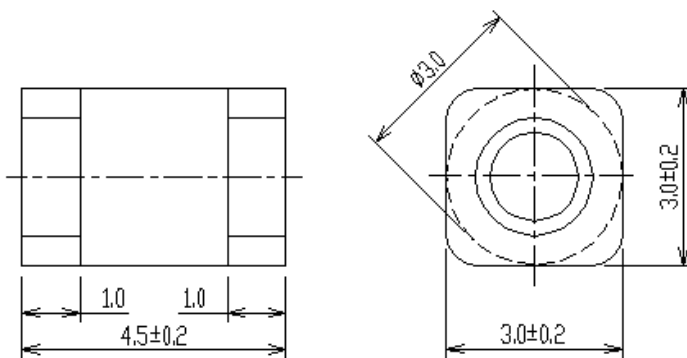
\* Devices <=150V measured @ 50Vdc

## GTCS23-XXXM-R01-2 Series

### Product Dimensions

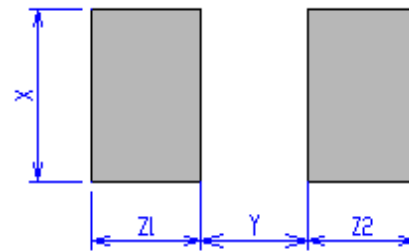
**DIMENSIONS = MILLIMETERS [INCHES]**

Surface-mount (GTCS23-XXXM-R01-2)



### Pad Layout – Surface-mount Devices (GTCS23-XXXM-R01-2)

	X	Y	Z1	Z2
	NOM	NOM	NOM	Nom
mm:	3.0	2.0	2.0	2.0
in*:	(0.118)	(0.079)	(0.079)	(0.079)



### General Characteristics

No Radioactive Material

Storage Temperature: -40°C to +90°C

Operating Temperature: -40°C to +90°C

Electrode: Tin Plated

### Materials Information

**ROHS Compliant**

Directive 2002/95/EC  
Compliant

**ELV Compliant**

Directive 2000/53/EC  
Compliant

**Pb-Free**



**Halogen Free\***



## GTCS23-XXXM-R01-2 Series

### Packaging Information

Part Description	Reel	Standard Package
Surface-mount: GTCS23-XXXM-R01-2	2,000pcs (Reel)	16,000pcs

### Part Numbering System

#### Example Part Number: GTCS23-351M-R01-2

- GT = Gas Tube
- C = Ceramic
- S = Lead Configuration: **S**= Surface-mount
- 2 = 2 Electrode device
- 3 = 3mm Diameter
- 351 = DC Spark Over Voltage of 350V (at 100V/s)
- M = Tolerance of 20% on DC Spark Over Voltage
- R = Product Family Designator
- 01 = Surge rating: 8x20 $\mu$ s 1kA 10 times
- 2 = Tape and Reel Packaging

Littelfuse products are not designed for, and shall not be used for, any purpose (including, without limitation, automotive, military, aerospace, medical, life-saving, life-sustaining or nuclear facility applications, devices intended for surgical implant into the body, or any other application in which the failure or lack of desired operation of the product may result in personal injury, death, or property damage) other than those expressly set forth in applicable Littelfuse product documentation. Warranties granted by Littelfuse shall be deemed void for products used for any purpose not expressly set forth in applicable Littelfuse documentation. Littelfuse shall not be liable for any claims or damages arising out of products used in applications not expressly intended by Littelfuse as set forth in applicable Littelfuse documentation. The sale and use of Littelfuse products is subject to Littelfuse Terms and Conditions of Sale, unless otherwise agreed by Littelfuse.