

## Gas Discharge Tubes GTCC23-XXXM-R01-2 Series

Littelfuse Circuit Protection 3mm 2Pole Chip 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 Chip 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

## Gas Discharge Tubes

### GTCC23-XXM-R01-2 Series

#### Device Voltage Ratings

| Part Number        | DC Sparkover                     | Impulse Sparkover Voltage |
|--------------------|----------------------------------|---------------------------|
|                    | @100V/s<br>±20% Tolerance<br>(V) | @1000 V/μs (V)            |
| GTCC23-750M-R01-2* | 75                               | 600                       |
| GTCC23-900M-R01-2  | 90                               | 600                       |
| GTCC23-141M-R01-2  | 140                              | 600                       |
| GTCC23-151M-R01-2  | 150                              | 600                       |
| GTCC23-201M-R01-2  | 200                              | 700                       |
| GTCC23-231M-R01-2  | 230                              | 700                       |
| GTCC23-301M-R01-2  | 300                              | 900                       |
| GTCC23-351M-R01-2  | 350                              | 1000                      |
| GTCC23-401M-R01-2  | 400                              | 1000                      |
| GTCC23-421M-R01-2  | 420                              | 1000                      |
| GTCC23-501M-R01-2  | 500                              | 1200                      |

\*DCSO 60~105

Part Marking : Not Applicable

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

| Part Number       | Insulation Resistance | Capacitance | Impulse Discharge Current<br>8/20μs |                                  | Impulse Withstanding Voltage 10/700μs | UL Rating          |
|-------------------|-----------------------|-------------|-------------------------------------|----------------------------------|---------------------------------------|--------------------|
|                   | @100V <sub>DC</sub> * | @1Mhz       | 10 hits (5hits each polarity)       | 300 hits (150hits each polarity) | 10 hits (5 times each polarity)**     | UL497B<br>#E179610 |
| GTCC23-xxxM-R01-2 | ≥ 1,000 (MΩ)          | <0.5pF      | 1kA                                 | 100A                             | 4kV                                   | All Devices        |

\* Devices ≤150V measured @ 50Vdc

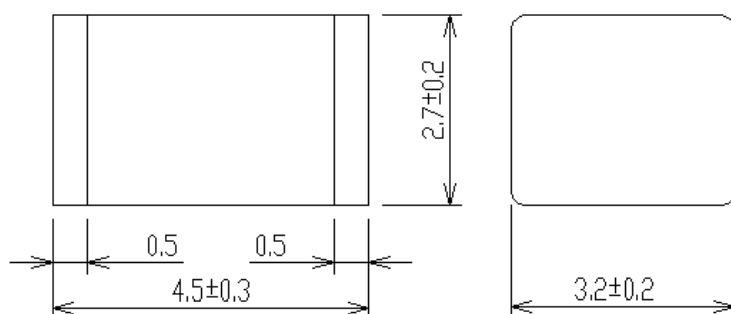
\*\* Effective output impedance: 40ohms

## GTCC23-XXM-R01-2 Series

### Product Dimensions

DIMENSIONS = MILLIMETERS [INCHES]

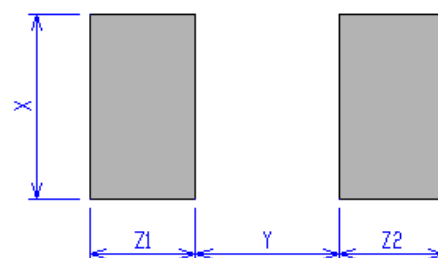
#### Surface-mount (GTCC23-XXM-R01-2)



### Pad Layout – Surface-mount Devices (GTCC23-XXM-R01-2)

|      | X       | Y       | Z1      | Z2      |
|------|---------|---------|---------|---------|
|      | NOM     | NOM     | NOM     | NOM     |
| mm:  | 3.5     | 2.7     | 2.0     | 2.0     |
| in*: | (0.138) | (0.106) | (0.079) | (0.079) |

\*Rounded off approximation



### 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\*



## GTCC23-XXXM-R01-2 Series

### Packaging Information

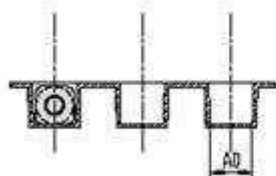
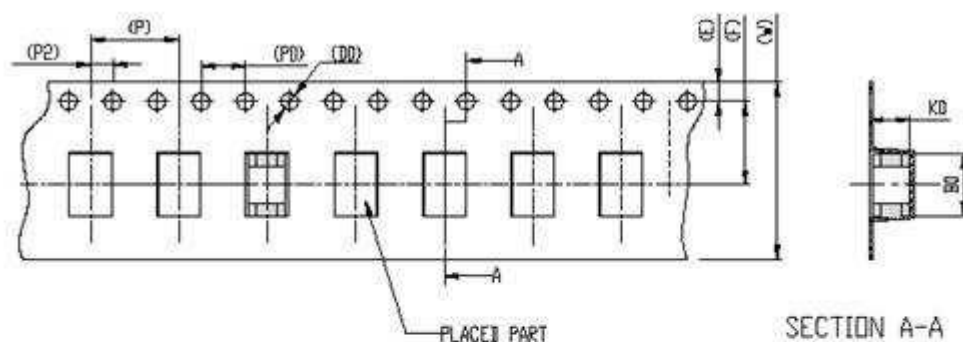
#### Part Description

Surface-mount: GTCC23-XXXM-R01-2 2000pcs (Reel)

#### Standard Package

16,000pcs

### Packaging Information



| DIMENSION IN MM |            |    |           |    |           |
|-----------------|------------|----|-----------|----|-----------|
| W               | 16.00±0.30 | P  | 8.00±0.10 | AD | 3.40±0.10 |
| S               |            | P0 | 4.00±0.10 |    |           |
| E               | 1.75±0.10  | P2 | 2.00±0.10 |    |           |
| F               | 7.50±0.10  | D0 | 1.50±0.10 | KD | 3.30±0.10 |
| T               | 0.35±0.05  | D1 |           |    | COLOR : B |

### GTCC23-XXM-R01-2 Series

#### Part Numbering System

##### Example Part Number: GTCC23-351M-R01-2

GT = Gas Tube  
C = Ceramic  
C = Lead Configuration: C= Chip Type  
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

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