



## Features

- Bourns® FLAT® GDT technology
- Flexible mounting options
- Volume and space-saving design
- Improved impulse performance
- 25 kA 8/20  $\mu$ s rated
- UL Recognized
- RoHS compliant\* and halogen free\*\*

## Applications

- Telecom CPE
- Industrial Communications
- Surge Protective Devices
- High density PCB assemblies

## 2019 Series Gas Discharge Tube Surge Arrestor with FLAT® Technology

### Description

Bourns sets a new industry standard by offering a high current rated 2-electrode GDT in an innovative flat-package design. The Model 2019 Series with FLAT® Technology is an ITU K.12 Class IV GDT device rated at 25 kA maximum on an 8/20  $\mu$ s waveform, providing a volume and space-saving solution for high density and space-restricted PCB applications. This surface mount device is available in a horizontal mounting configuration.

### Characteristics

Test Methods per ITU-T (CCITT) K.12 Class 3 and IEC 61643-311

Characteristic	Model No.		
	2019-09	2019-15	2019-23
DC Sparkover $\pm 20\%$ @ 100 V/s <sup>(1)</sup>	90 V	150 V	230 V
DC Sparkover End-of-Life Values <sup>(2)</sup>			
Maximum (99 % of values)	<120 V	<195 V	<300 V
Minimum (99 % of values)	>65 V	>110 V	>170 V
Impulse Sparkover Voltage <sup>(3)</sup>			
100 V/ $\mu$ s Typical / For 99 % of Values	350 / <450 V	400 / <550 V	450 / <600 V
1 kV/ $\mu$ s Typical / For 99 % of Values	600 / <800 V	600 / <850 V	700 / <950 V

Insulation Resistance (IR) .....	100 V (50 V for Model 2019-09) .....	>1 G $\Omega$
Glow Voltage .....	10 mA .....	~70 V
Arc Voltage .....	>1 A .....	~10 V
Capacitance .....	1 MHz .....	<4 pF
Impulse Discharge Current .....	25 kA, 8/20 $\mu$ s .....	1 operation <sup>(4)</sup>
	20 kA, 8/20 $\mu$ s .....	10 operations
	5000 A, 10/350 $\mu$ s .....	1 operation <sup>(4)</sup>
	100 A, 10/1000 $\mu$ s .....	300 operations
	10 A, 10/1000 $\mu$ s .....	1500 operations <sup>(4)</sup>
Alternating Discharge Current .....	20 Arms, 1 s .....	10 operations
Operating Temperature .....		-55 to +85 °C
Storage Temperature .....		-55 to +105 °C
Climatic Category (IEC 60068-1) .....		55/105/21
Moisture Sensitivity Level .....		1
ESD Classification (HBM) .....		N/A

#### Notes:

**UL Recognized component, UL File E153537**

- (1) In ionized mode.
- (2) IR after life  $>10^8 \Omega$ .
- (3) At delivery AQL 0.65 Level II, DIN ISO 2859.
- (4) DC Sparkover may exceed  $\pm 20\%$  after discharge, but will continue to protect without venting.



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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Specifications are subject to change without notice.

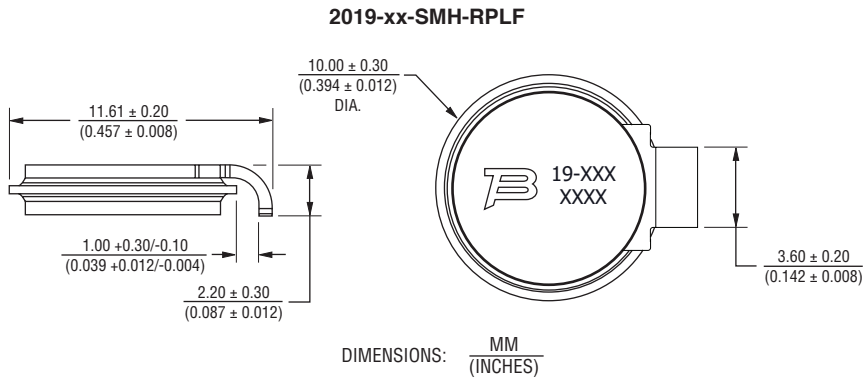
Users should verify actual device performance in their specific applications.

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# 2019 Series Gas Discharge Tube Surge Arrestor with FLAT® Technology



## Product Dimensions



## How to Order

**2019 - xx - SMH - RP LF**

Series Designator \_\_\_\_\_  
 2019 = 2-electrode GDT with FLAT® Technology, 20 kA 8/20  $\mu$ s rated

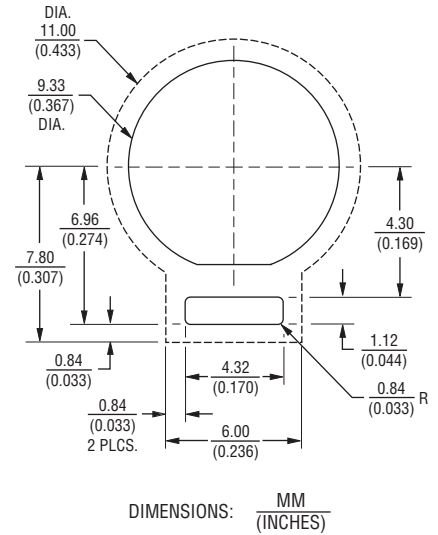
Voltage (Divided by 10) \_\_\_\_\_  
 09 = 90 V  
 15 = 150 V  
 23 = 230 V

Configuration \_\_\_\_\_  
 SMH = Horizontal Mount SMD

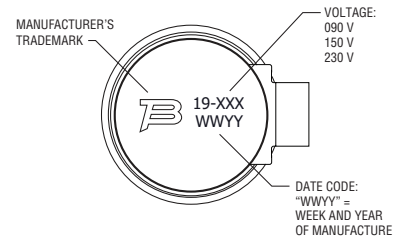
Packaging \_\_\_\_\_  
 RP = Reelpack (Standard)  
 Blank = Bulk Pack

RoHS Compliancy \_\_\_\_\_  
 LF = RoHS Compliant Product

## Pad Layout



## Typical Part Marking



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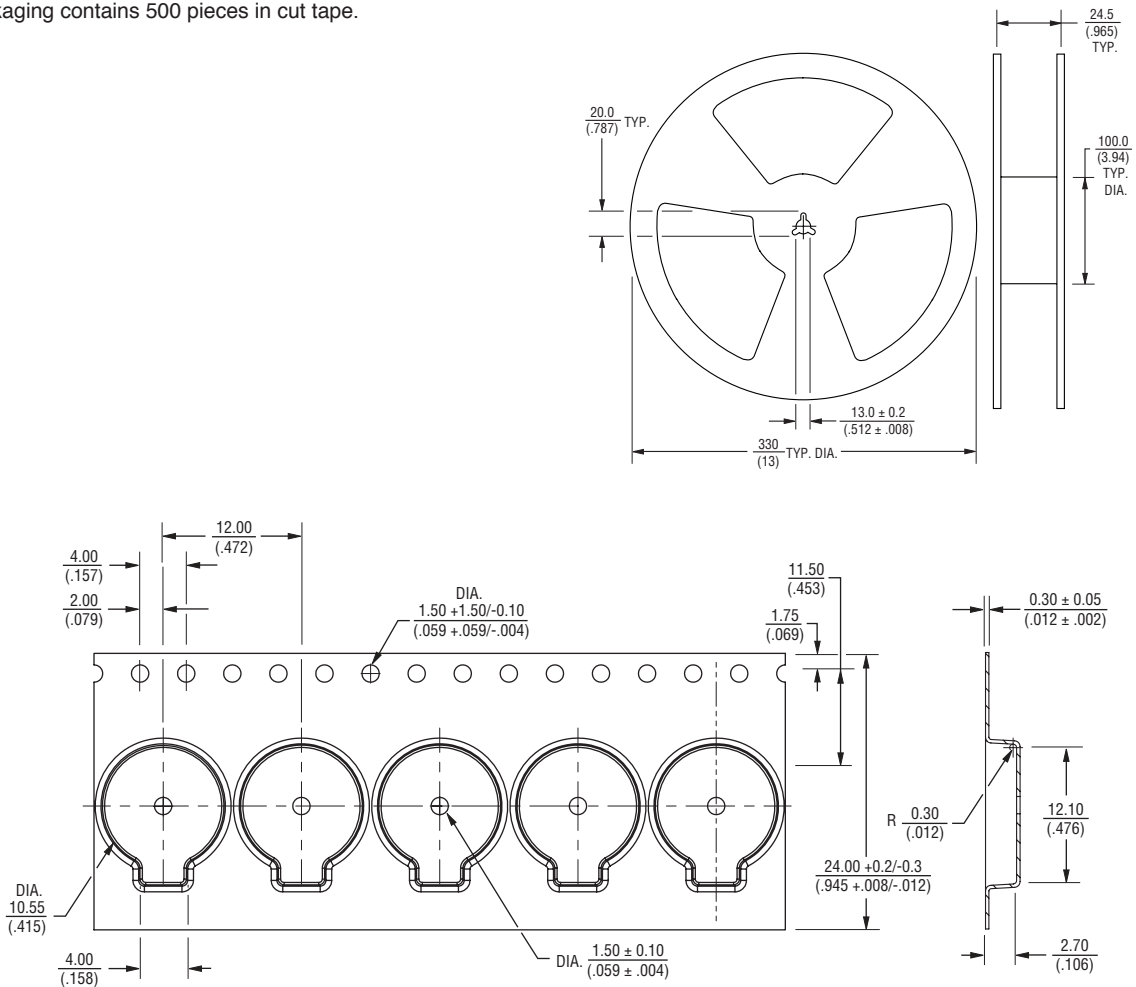
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**Packaging Specification**

The standard tape and reel packaging contains 2,000 pieces per 13-inch reel.

Bulk packaging contains 500 pieces in cut tape.



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

REV. A – 09/18

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Users should verify actual device performance in their specific applications.

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