



## Features

- Bourns® FLAT® GDT technology
- Flexible mounting options
- Low profile, space-saving design
- 10x 20 kA 8/20  $\mu$ s rating
- UL Recognized
- RoHS compliant\*

## Applications

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

## 2018 Series - Gas Discharge Tube Surge Arrestor with FLAT® Technology

### Description

Bourns sets a new industry standard by offering this 3-electrode Gas Discharge Tube (GDT) in an innovative flat package design. The Model 2018 Series with FLAT® Technology provides a low profile, space-saving solution for space-restricted PCB applications.

### Additional Information

Click these links for more information:



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### Characteristics

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

Characteristic	Model No.					
	2018-09	2018-15	2018-23	2018-35	2018-42	2018-50
DC Sparkover $\pm 20\%$ @ 100 V/s <sup>(1)</sup>	90 V	150 V	230 V	350 V	420 V	500 V
DC Sparkover End-of-Life Values <sup>(2)</sup>						
Maximum (99 % of values)	<120 V	<195 V	<300 V	<455 V	<550 V	<650 V
Minimum (99 % of values)	>65 V	>110 V	>170 V	>260 V	>315 V	>375 V
Impulse Sparkover Voltage <sup>(3)</sup>						
100 V/ $\mu$ s Typical / For 99 % of Values	350 / <600 V	400 / <750 V	450 / <900 V	600 / <1050 V	700 / <1150 V	800 / <1250 V
1 kV/ $\mu$ s Typical / For 99 % of Values	650 / <850 V	650 / <900 V	600 / <1000 V	800 / <1250 V	900 / <1400 V	1000 / <1600 V

Insulation Resistance (IR) .....	100 V (50 V for Model 2018-09) .....	> G $\Omega$ 1
Glow Voltage .....	10 mA .....	~70 V
Arc Voltage .....	>1 A .....	~10 V
Capacitance .....	1 MHz .....	<2.5 pF
Impulse Discharge Current <sup>(4)</sup> .....	24,000 A, 8/20 $\mu$ s <sup>(5)</sup> .....	1 operation
	20,000 A, 8/20 $\mu$ s .....	> 10 operations
	5,000 A, 10/350 $\mu$ s .....	1 operation
	200 A, 10/1000 $\mu$ s .....	>300 operations
	20 A, 10/1000 $\mu$ s .....	>1500 operations
Alternating Discharge Current .....	10 Arms, 1 s .....	>10 operations
Operating/Storage Temperature .....		-55 to +105 °C
Climatic Category (IEC 60068-1) .....		55/105/21
Moisture Sensitivity Level .....		1
ESD Classification .....		3B (>8000 V)

#### Notes:

- **UL Recognized component, UL File E153537**

• DC Breakdown and Impulse Sparkover voltage are specified line to ground. Line to Line values are typically 1.8 to 2 times the stated line to ground values.

- (1) In ionized mode. (4) Total current rating through center electrode; half value each line to center electrode.  
 (2) IR after life  $>10^8 \Omega$ . (5) DC Sparkover may exceed  $\pm 25\%$  after discharge, but will continue to protect without venting.  
 (3) At delivery AQL 0.65 Level II, DIN ISO 2859.

### How to Order

**2018 - xx - SMH - RP LF**

Series Designator \_\_\_\_\_  
 2018 = 3-electrode GDT with FLAT® Technology, 20 kA 8/20  $\mu$ s rated

Voltage \_\_\_\_\_  
 09 = 90 V    23 = 230 V    42 = 420 V  
 15 = 150 V    35 = 350 V    50 = 500 V

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

Packaging \_\_\_\_\_  
 RP = Reelpack (Standard)

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



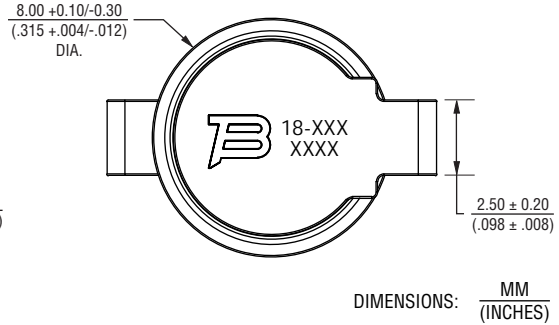
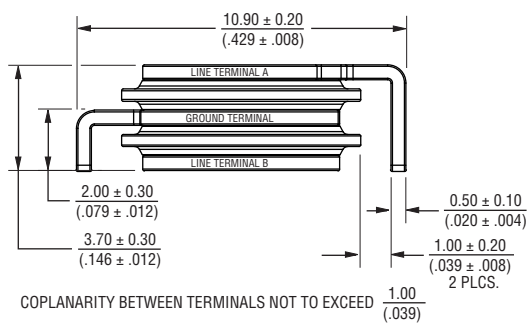
**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
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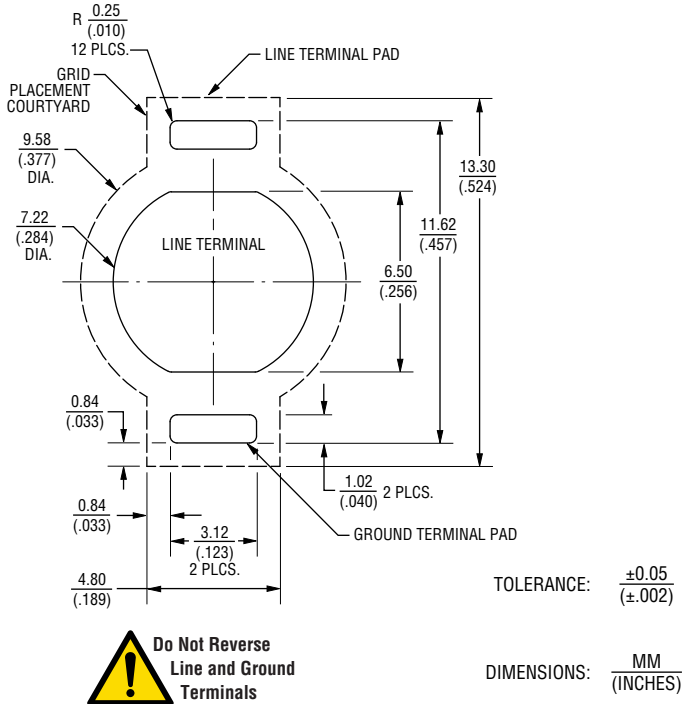
# 2018 Series - Gas Discharge Tube Surge Arrestor with FLAT® Technology

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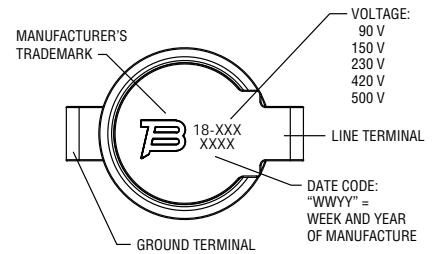
## Product Dimensions



## Pad Layout



## Typical Part Marking and Pin-Out



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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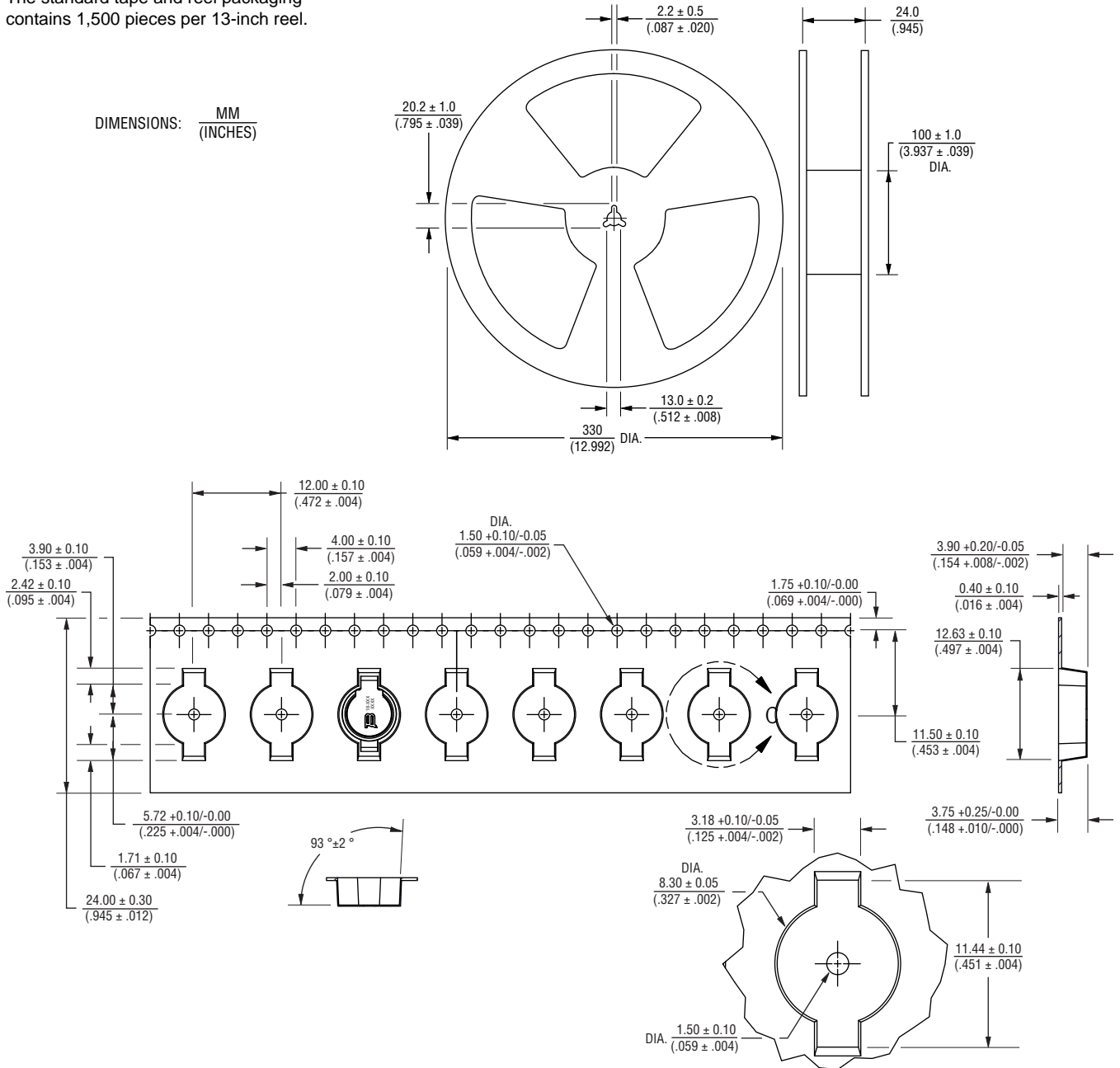
# 2018 Series - Gas Discharge Tube Surge Arrestor with FLAT® Technology

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## Packaging Specifications

The standard tape and reel packaging contains 1,500 pieces per 13-inch reel.

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



REV. 09/19

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