2019 Series Gas Discharge Tube Surge Arrestor with FLAT® Technology

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

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

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 µs 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

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>DC Sparkover ±20 % @ 100 V/s (1)</td>
<td>90 V</td>
<td>150 V</td>
<td>230 V</td>
</tr>
<tr>
<td>DC Sparkover End-of-Life Values (2)</td>
<td>&lt;120 V</td>
<td>&lt;195 V</td>
<td>&lt;300 V</td>
</tr>
<tr>
<td>Maximum (99 % of values)</td>
<td>&gt;65 V</td>
<td>&gt;110 V</td>
<td>&gt;170 V</td>
</tr>
<tr>
<td>Minimum (99 % of values)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impulse Sparkover Voltage (3)</td>
<td>350 / &lt;450 V</td>
<td>400 / &lt;550 V</td>
<td>450 / &lt;600 V</td>
</tr>
<tr>
<td>100 V/µs Typical / For 99 % of Values</td>
<td>600 / &lt;800 V</td>
<td>600 / &lt;850 V</td>
<td>700 / &lt;950 V</td>
</tr>
<tr>
<td>1 kV/µs Typical / For 99 % of Values</td>
<td></td>
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</table>

Insulation Resistance (IR) ........................................100 V (50 V for Model 2019-09) ......................................................... > 1 GΩ
Glow Voltage .........................................................10 mA ..................................................................................... ~ 70 V
Arc Voltage .......................................................>1 A ................................................................. ~ 10 V
Capacitance .........................................................1 MHz ..................................................................................... <4 pF
Impulse Discharge Current ......................................25 kA, 8/20 µs ................................................................. 1 operation (4)
| 20 kA, 8/20 µs ................................................................. 10 operations |
| 5000 A, 10/350 µs ................................................................. 1 operation (4) |
| 100 A, 10/1000 µs ................................................................. 300 operations |
| 10 A, 10/1000 µs ................................................................. 1500 operations (4) |
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 >10^9 Ω.
(3) At delivery AQL 0.65 Level II, DIN ISO 2859.
(4) DC Sparkover may exceed ±20 % after discharge, but will continue to protect without venting.

WARNING  Cancer and Reproductive Harm - www.P65Warnings.ca.gov

** 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.
*FLAT® is a registered trademark of Bourns, Inc. in the U.S. and other countries.
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

**2019-xx-SMH-RPLF**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA.</td>
<td>11.00 (0.433)</td>
</tr>
<tr>
<td>9.33 (0.367)</td>
<td>DIA.</td>
</tr>
<tr>
<td>0.84 (0.033)</td>
<td>2 PLCS.</td>
</tr>
<tr>
<td>4.32 (0.170)</td>
<td></td>
</tr>
<tr>
<td>1.12 (0.044)</td>
<td></td>
</tr>
<tr>
<td>0.84 (0.033)</td>
<td></td>
</tr>
</tbody>
</table>

**DIMENSIONS:** MM

#### How to Order

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

<table>
<thead>
<tr>
<th>Series Designator</th>
<th>2019 = 2-electrode GDT with FLAT® Technology, 20 kA 8/20 µs rated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage (Divided by 10)</td>
<td>90 V = 09</td>
</tr>
<tr>
<td>150 V = 15</td>
<td></td>
</tr>
<tr>
<td>230 V = 23</td>
<td></td>
</tr>
<tr>
<td>Configuration</td>
<td>SMH = Horizontal Mount SMD</td>
</tr>
<tr>
<td>Packaging</td>
<td>RP = Reelpack (Standard)</td>
</tr>
<tr>
<td>Blank = Cut Tape</td>
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</tr>
<tr>
<td>RoHS Compliancy</td>
<td>LF = RoHS Compliant Product</td>
</tr>
</tbody>
</table>

#### Pad Layout

**DIMENSIONS:** MM

#### Typical Part Marking

**VOLTAGE**

- 000 V = 19-XXX
- 150 V = WWYY
- 250 V

**DATE CODE:**

- "WWYY" = WEEK AND YEAR OF MANUFACTURE

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Packaging Specification

TAPE & REEL

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

CUT TAPE

Cut tape contains 500 pieces within a carton box.

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