ChipGuard® MLA Series µVaristor ESD Clamp Protector

Features
- Miniature 0201 package
- Fast response time to ESD strikes (<1 ns)
- Bidirectional protection
- Low clamping voltage
- Low leakage current
- RoHS compliant*

Applications
- Smart phones
- Tablets
- Handheld devices
- Embedded components
- Scanners
- Notebooks

Description
Bourns® ChipGuard® MLA Series µVaristor ESD Clamp Protectors are based on multilayer metal oxide varistor technology. Bidirectional ESD protection is provided in a miniature 0201 package, making it one of the smallest protectors available on the market today. The series is ideally suited for space-constrained applications where circuit board space is at a premium.

Electrical Characteristics @ 25 °C (unless otherwise noted)

<table>
<thead>
<tr>
<th>Model</th>
<th>Vrms (V)</th>
<th>VDC (V)</th>
<th>VN Min. (V)</th>
<th>VN Max. (V)</th>
<th>VC (V)</th>
<th>ITM (Max.) (A)</th>
<th>WTM (Max.) (J)</th>
<th>CP (pF) Typ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG0201MLA-5.5MH</td>
<td>4</td>
<td>5.5</td>
<td>8</td>
<td>14</td>
<td>28</td>
<td>1 A @ 8/20 µs</td>
<td>10/1000 µs</td>
<td>32</td>
</tr>
</tbody>
</table>

General Characteristics
- Operating Temperature: -40 °C to +85 °C
- Storage Temperature: -40 °C to +85 °C
- Response Time: <1 ns

Performance Standard: IEC 61000-4-2

Environmental Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
<th>Test Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bias Humidity</td>
<td>ΔVn/Vn ≤ 10 %</td>
<td>90 % RH, 40 °C, Working Voltage, 1000 Hours</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td></td>
<td>-40 °C to +85 °C, 30 Minute Cycle, 5 Cycles Total</td>
</tr>
<tr>
<td>Load Test</td>
<td></td>
<td>Working Voltage, 85 °C, 1000 Hours</td>
</tr>
</tbody>
</table>

Device Symbol

How to Order

CG 0201 MLA - 5.5 x H

- ChipGuard®
- Product Designator: CG 0201 MLA - 5.5 x H
- Package Designator: 0201 = 0201 Package
- Technology: MLA = Multilayer Varistor
- Operating Voltage: 5.5 V
- Tolerance: M = ±20 %
- Tape & Reel Packaging: H = 15,000 pcs. per reel

Additional Information
Click these links for more information:
- PRODUCT SELECTOR
- TECHNICAL LIBRARY
- INVENTORY
- SAMPLES
- CONTACT

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

ChipGuard® MLA Series μVaristor ESD Clamp Protector

Product Dimensions

<table>
<thead>
<tr>
<th>TOP VIEW</th>
<th>SIDE VIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.60 ± 0.05 (0.024 ± .002)</td>
<td>0.30 ± 0.05 (0.012 ± .002)</td>
</tr>
<tr>
<td>0.20 ± 0.10 (0.008 ± .004)</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Pad Layout

<table>
<thead>
<tr>
<th>TOP VIEW</th>
<th>SIDE VIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25 ± 0.05 (0.010 ± .002)</td>
<td>0.30 ± 0.05 (0.012 ± .002)</td>
</tr>
<tr>
<td>0.25 ± 0.05 (0.010 ± .002)</td>
<td></td>
</tr>
</tbody>
</table>

Construction

Lead Free Overcoating

Metal Oxide Layer

Inner Electrode

100 % Ag Layer

100 % Ni Barrier Layer

100 % Sn Plated Layer

Solder Reflow Recommendations

A Stage 1 Preheat Ramp

Ambient to Preheating Temperature

3 °C / s max.

B Stage 2 Preheat

Preheat min./max. Temperature Range

150 °C to 200 °C

60 s to 180 s

C Stage 3 Preheat to Main Heating

Max. Time Above Stated Temperature

217 °C

60 s to 150 s

D Main Heating

Max. Time Within 5 °C of Peak Temperature (260 °C)

255 °C

20 s to 40 s

E Cool Down

Rate from Peak Temperature

6 °C / s max.

CAUTION:

- Rapid heating and cooling in excess of stated maximum rates will easily damage this product.
- Locating heating can also damage product.
- Do not thermally shock product in excess of 100 °C.
- Product can be repaired using a 30 W or less solder gun/iron. Tip temperature maximum is 280 °C for less than 3 seconds.
- Do not touch the component directly with the soldering gun/iron.
- Excess soldering volumes can damage the body of the product.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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Packaging Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA.</td>
<td>MM</td>
<td>8.0 ± 0.1</td>
</tr>
<tr>
<td></td>
<td>INCHES</td>
<td>(315 ± 0.04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.0 ± 0.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.57 ± 0.004)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.0 ± 0.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.079 ± 0.002)</td>
</tr>
<tr>
<td>0.42 ± 0.02</td>
<td>(0.017 ± 0.0008)</td>
<td></td>
</tr>
<tr>
<td>1.55 ± 0.05</td>
<td>(0.061 ± 0.002)</td>
<td></td>
</tr>
<tr>
<td>0.36 ± 0.02</td>
<td>(0.014 ± 0.0008)</td>
<td></td>
</tr>
<tr>
<td>0.70 ± 0.02</td>
<td>(0.028 ± 0.0008)</td>
<td></td>
</tr>
<tr>
<td>3.5 ± 0.05</td>
<td>(0.138 ± 0.002)</td>
<td></td>
</tr>
<tr>
<td>2.0 ± 0.05</td>
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