ChipGuard® CG0201MLU Series – ESD Protectors

**Features**
- ESD protection to IEC 61000-4-2 Level 4
- Extremely quick response time (<1 ns)
- Low capacitance (0.05 pF typ.)
- RoHS* compliant

**Applications**
- Antenna circuits
- USB 3.2 Gen 1 and Gen 2
- HDMI 1.3/1.4/2.0
- SATA and eSATA Interface
- SIM card ports
- Memory protection

**General Information**

The ChipGuard® Model CG0201MLU Series has been specifically designed to protect sensitive electronic components from electrostatic discharge damage. This series is suitable for protecting equipment to IEC 61000-4-2, Level 4 (±8 kV Contact / ±15 kV Air Discharge) ESD specifications targeted for high speed USB 3.2, HDMI 1.4/2.0 applications and antenna circuits.

The ChipGuard® MLU Series provides low capacitance (0.05 pF), and leakage currents less than 10 nA with excellent clamping qualities, making the components almost transparent under normal working conditions.

**Electrical Characteristics @ 25 °C (unless otherwise noted)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>CG0201MLU</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage (Max.)</td>
<td>V_{DC}</td>
<td>06H 12H 15H 24H 30H</td>
<td>V</td>
</tr>
<tr>
<td>Typical Clamping Voltage (Note 1)</td>
<td>V_{C}</td>
<td>20</td>
<td>V</td>
</tr>
<tr>
<td>Typical Capacitance @ 1 MHz</td>
<td>C_{O}</td>
<td>0.05</td>
<td>pF</td>
</tr>
<tr>
<td>Typical Leakage Current @ Max. VDC</td>
<td>I_{L}</td>
<td>10</td>
<td>nA</td>
</tr>
<tr>
<td>Typical Trigger Voltage (Note 1)</td>
<td>V_{T}</td>
<td>300</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Response Time</td>
<td>R_{T}</td>
<td>1</td>
<td>ns</td>
</tr>
<tr>
<td>ESD Protection per IEC 61000-4-2: Min. Contact Discharge (&gt;1000 Reps)</td>
<td>±8</td>
<td></td>
<td>kV</td>
</tr>
<tr>
<td>Min. Air Discharge (&gt;1000 Reps)</td>
<td>±15</td>
<td></td>
<td>kV</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>T_{OPR}</td>
<td>-40 to +85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>T_{STG}</td>
<td>-40 to +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

Note: 1. V_{T} and V_{C} measured using TLP (Transmission Line Pulse) method.

**How To Order**

ChipGuard® CG 0n0n MLU - nn x

- **Product Designator**
- **Package Option**
  - 0201 = 0201 Package
- **Series Designator**
- **Rated Voltage**
  - 06 = 6 V
  - 12 = 12 V
  - 15 = 15 V
  - 24 = 24 V
  - 30 = 30 V
- **Tape & Peel Packaging**
  - H = 15,000 pcs. per 7-inch Reel

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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ChipGuard® CG0201MLU Series – ESD Protectors

Product Dimensions

Recommended Pad Layout

Solder Reflow Recommendations

- This product can be damaged by rapid heating, cooling or localized heating.
- Heat shocks should be avoided. Preheating and gradual cooling recommended.
- Excessive solder can damage the device. Print solder thickness of 150 to 200 um recommended.
- Solder gun tip temperature should be kept below 280 °C and should not touch the device directly. Contact should be less than 3 seconds. A solder gun under 30 watts is recommended.
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Packaging Dimensions

Dimensions: MM (INCHES)

- 1.75 ± 0.05 (0.069 ± 0.002)
- 4.00 ± 0.10 (0.157 ± 0.004)
- 1.55 ± 0.05 (0.061 ± 0.002)
- 0.42 ± 0.02 (0.017 ± 0.001)
- 8.00 ± 0.30 (0.315 ± 0.012)
- 2.00 ± 0.05 (0.079 ± 0.002)
- 0.37 ± 0.02 (0.015 ± 0.001)
- 0.68 ± 0.02 (0.027 ± 0.001)
- 2.0 ± 0.5 (0.079 ± 0.020)
- 9.0 ± 0.5 (0.354 ± 0.020)
- 21.0 ± 0.8 (0.827 ± 0.031)
- 62.0 ± 1.5 (2.441 ± 0.059)
- 170.0 ± 5.0 (6.693 ± 0.200)
- 13.0 ± 1.0 (0.512 ± 0.039)
- 13.0 ± 0.5 (0.512 ± 0.020)
- 62.0 ± 1.5 (2.441 ± 0.059)
- 170.0 ± 5.0 (6.693 ± 0.200)

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