



## 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

# ChipGuard® CG0201MLU Series – ESD Protectors

### 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 ( $\pm 8$  kV Contact /  $\pm 15$  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.

### Additional Information

Click these links for more information:



### Device Symbol

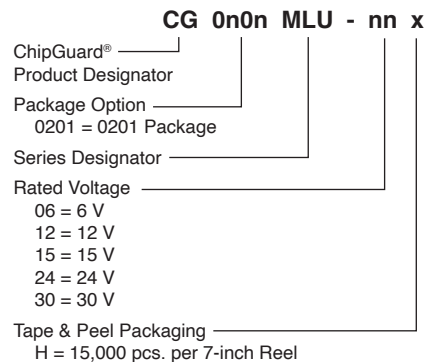


### Electrical Characteristics @ 25 °C (unless otherwise noted)

Parameter	Symbol	CG0201MLU					Unit
		06H	12H	15H	24H	30H	
Rated Voltage (Max.)	$V_{DC}$	6	12	15	24	30	V
Typical Clamping Voltage (Note 1)	$V_C$	20					V
Typical Capacitance @ 1 MHz	$C_O$	0.05					pF
Typical Leakage Current @ Max. VDC	$I_L$	10					nA
Typical Trigger Voltage (Note 1)	$V_T$	300					V
Maximum Response Time	$R_T$	1					ns
ESD Protection per IEC 61000-4-2: Min. Contact Discharge (>1000 Repts) Min. Air Discharge (>1000 Repts)		$\pm 8$					kV
		$\pm 15$					kV
Operating Temperature	$T_{OPR}$	-40 to +85					°C
Storage Temperature	$T_{STG}$	-40 to +85					°C

Note: 1.  $V_T$  and  $V_C$  measured using TLP (Transmission Line Pulse) method.

### How To Order



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

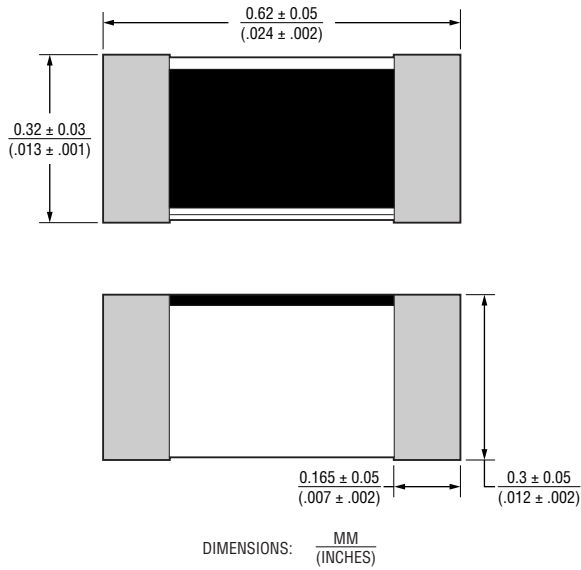
\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

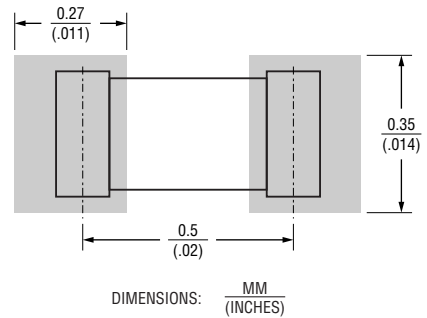
Users should verify actual device performance in their specific applications.

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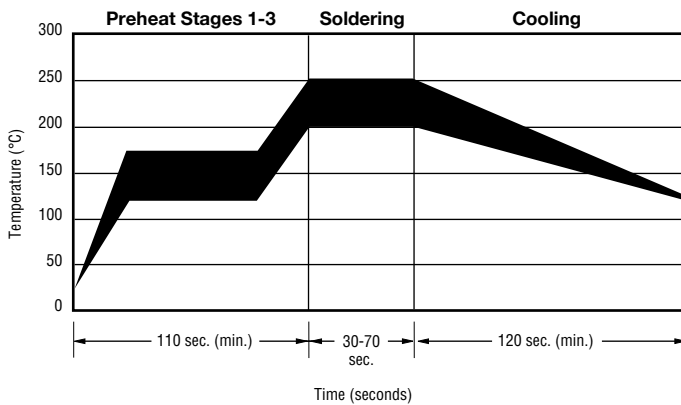
**Product Dimensions**



**Recommended Pad Layout**



**Solder Reflow Recommendations**



<b>A</b>	Stage 1 Preheat	Ambient to Preheating Temperature	30 s to 60 s
<b>B</b>	Stage 2 Preheat	140 °C to 160 °C	60 s to 120 s
<b>C</b>	Stage 3 Preheat	Preheat to 200 °C	20 s to 40 s
<b>D</b>	Main Heating	200 °C	60 s to 70 s
		210 °C	55 s to 65 s
		220 °C	50 s to 60 s
		230 °C	40 s to 50 s
	240 °C	30 s to 40 s	
<b>E</b>	Cooling	200 °C to 100 °C	1 °C/s to 4 °C/s

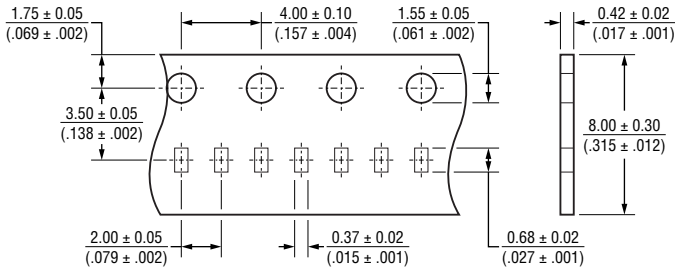
- This product can be damaged by rapid heating, cooling or localized heating.
- Heat shocks should be avoided. Preheating and gradual cooling recommended.
- Excessive solder can damage the device. Print solder thickness of 150 to 200 um recommended.
- Solder gun tip temperature should be kept below 280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

Specifications are subject to change without notice.

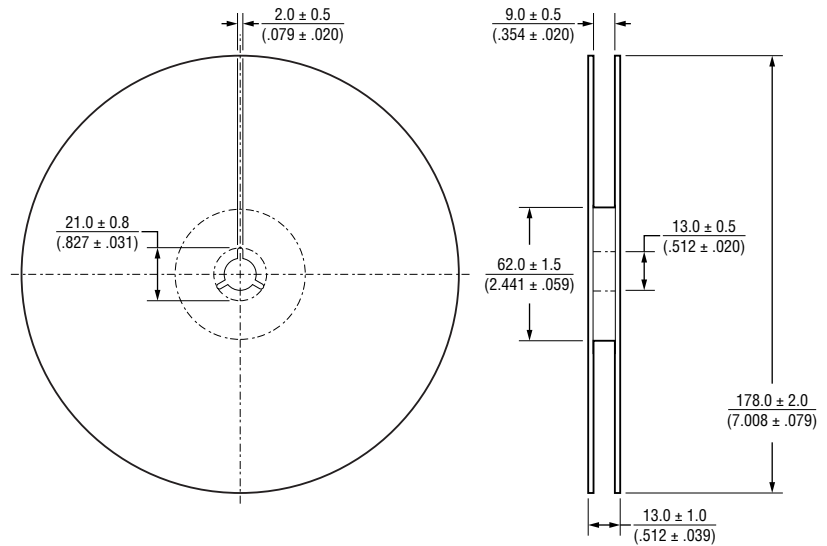
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**Packaging Dimensions**



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



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