*RoHS COMPLIANT

BOURNS®

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

ChipGuard® MLA Series µVaristor ESD Clamp Protector

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)

Model	Vrms (V)	VDC (V)	VN Min. (V)	VN Max. (V)	VC (V)	ITM (Max.) (A)	WTM (Max.) (J)	CP (pF) Typ.
	<10 μA		1 mA DC		1 A @ 8/20 μs	@ 8/20 μs	10/1000 μs	@ 1 MHz
CG0201MLA-5.5MH	4	5.5	8	14	28	—	—	32

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

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

Device Symbol
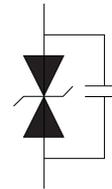
How to Order

CG 0201 MLA - 5.5 x H

ChipGuard® Product Designator

Package Designator
0201 = 0201 Package

Technology
MLA = Multilayer Varistor

Operating Voltage
5.5 = 5.5 V

Tolerance
M = 20 %

Tape & Reel Packaging
H = 15,000 pcs. per reel

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116
EMEA: Tel: +36 88 520 390 • Fax: +36 88 520 211
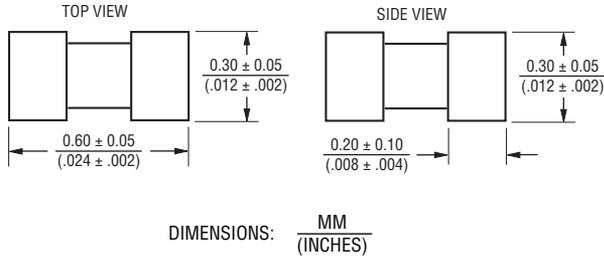**The Americas:** Tel: +1-951 781-5500 • Fax: +1-951 781-5700
www.bourns.com

ChipGuard® MLA Series µVaristor ESD Clamp Protector

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Product Dimensions

TOP VIEW

0.30 ± 0.05
(.012 ± .002)

0.60 ± 0.05
(.024 ± .002)

SIDE VIEW

0.30 ± 0.05
(.012 ± .002)

0.20 ± 0.10
(.008 ± .004)

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

Recommended Pad Layout

0.30 ± 0.05
(.012 ± .002)

0.25 ± 0.05
(.010 ± .002)

0.25 ± 0.05
(.010 ± .002)

0.30 ± 0.05
(.012 ± .002)

Construction

Lead Free Overcoating

Metal Oxide Layer

Inner Electrode

100 % Ag Layer

100 % Ni Barrier Layer

100 % Sn Plated Layer
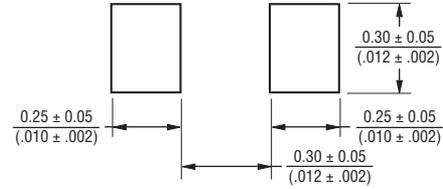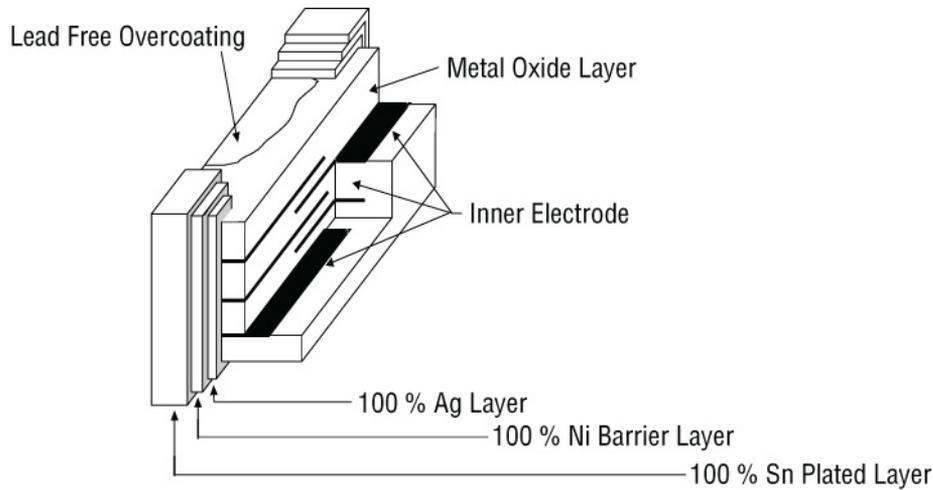
Solder Reflow Recommendations

T_P
T_L
T_{Smax}
T_{Smin}
Temperature (°C)
T_S
PREHEAT
25
t 25 °C TO PEAK
Time (seconds)

T_P
RAMP-UP
CRITICAL ZONE T_L TO T_P
T_L
RAMP-DOWN
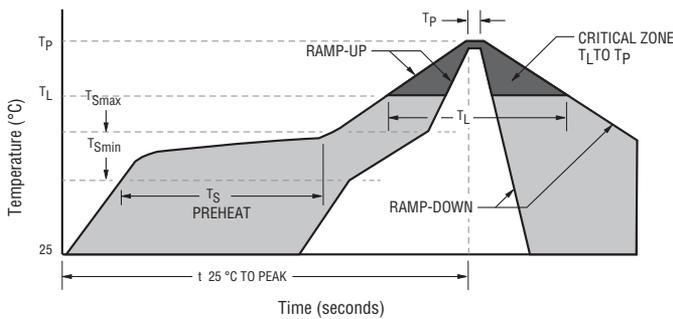
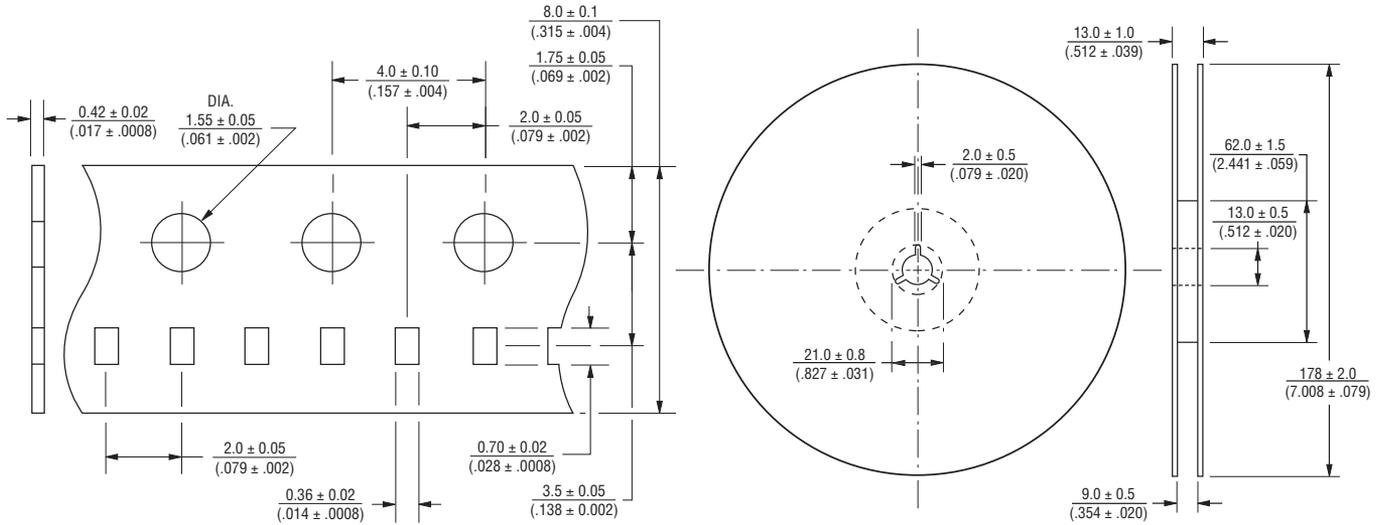|			
A	Stage 1 Preheat Ramp	Ambient to Preheating Temperature	3 °C / s max.
B	Stage 2 Preheat	Preheat min./max. Temperature Range	150 °C to 200 °C 60 s to 180 s
C	Stage 3 Preheat to Main Heating	Max. Time Above Stated Temperature	217 °C 60 s to 150 s
D	Main Heating	Max. Time Within 5 °C of Peak Temperature (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.

Packaging Dimensions

0.42 ± 0.02
(.017 ± .0008)

DIA.
1.55 ± 0.05
(.061 ± .002)

4.0 ± 0.10
(.157 ± .004)

8.0 ± 0.1
(.315 ± .004)

1.75 ± 0.05
(.069 ± .002)

2.0 ± 0.05
(.079 ± .002)

2.0 ± 0.05
(.079 ± .002)

0.36 ± 0.02
(.014 ± .0008)

0.70 ± 0.02
(.028 ± .0008)

3.5 ± 0.05
(.138 ± 0.002)

2.0 ± 0.5
(.079 ± .020)

21.0 ± 0.8
(.827 ± .031)

13.0 ± 1.0
(.512 ± .039)

62.0 ± 1.5
(2.441 ± .059)

13.0 ± 0.5
(.512 ± .020)

178 ± 2.0
(7.008 ± .079)

9.0 ± 0.5
(.354 ± .020)

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