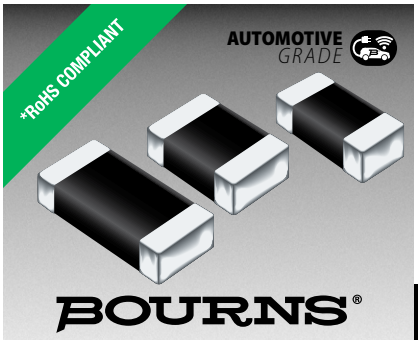


Features

- AEC-Q200 compliant
- Meets IEC 61000-4-2 standard
- Multilayered varistor technology
- Proprietary insulating overcoat provides low and stable leakage current
- Quick response time (<0.5 ns)
- High transient current capability
- High reliability
- RoHS compliant*

The CGAxxxxMLA Series is currently available, but not recommended for new designs. The recommended replacements are the BVRA0603, BVRA0805 and BVRA1206 series.

ChipGuard® Automotive MLA Series Varistor ESD Clamp Protectors

Description

Bourns® ChipGuard® Automotive MLA Series is a multlayered varistor designed specifically for use in automotive circuits requiring ESD protection. The CGA-MLA series is available in industry standard 0603, 0805 and 1206 packages. These robust protectors exhibit extremely fast response times to ESD events making them ideal for protecting a wide array automotive electronics.

ChipGuard® Automotive MLA Series products are fully AEC-Q200 qualified and supported.

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Electrical Characteristics @ 25 °C (unless otherwise noted)

Model	Package	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 KHz
CGA0603MLA-16150E	0603	14	16	23.0	34.2	70	5	0.030	15
CGA0603MLA-16121E		14	16	22.0	28.0	46	30	0.200	120
CGA0603MLA-17300E		14	17	21.6	34.4	70	2	0.050	30
CGA0603MLA-18101E		14	18	19.8	25.2	44	30	0.200	100
CGA0603MLA-19161E		14	19	24.0	32.0	64	20	0.100	160
CGA0603MLA-22750E		17	22	25.0	41.0	54	30	0.075	75
CGA0603MLA-22500E		17	22	24.3	30.7	54	10	0.100	50
CGA0603MLA-22101E		17	22	24.3	30.7	50	30	0.200	100
CGA0603MLA-22161E		17	22	24.3	30.7	50	30	0.200	160
CGA0603MLA-26800E		20	26	30.0	43.0	67	30	0.100	80
CGA0603MLA-31900E		25	31	35.0	43.9	71	30	0.200	90
CGA0603MLA-32120E		25	32	51.9	71.0	124	5	0.250	12
CGA0805MLA-16401E	0805	14	16	22.0	28.0	46	120	0.3	400
CGA0805MLA-18351E		14	18	19.8	25.2	44	120	0.3	350
CGA0805MLA-22101E		17	22	25.0	34.0	54	30	0.1	100
CGA0805MLA-22401E		17	22	24.3	30.7	50	120	0.3	400
CGA0805MLA-26221E		20	26	29.7	37.3	56	80	0.4	220
CGA0805MLA-31251E		25	31	35.1	43.9	71	80	0.3	250
CGA0805MLA-38201E		30	38	42.3	52.7	81	80	0.3	200
CGA1206MLA-16801E	1206	14	16	22.0	28.0	44	200	0.60	800
CGA1206MLA-16701E		14	16	19.8	25.2	42	200	0.50	700
CGA1206MLA-22651E		17	22	24.3	30.7	48	200	0.30	650
CGA1206MLA-22841E		17	22	24.3	29.7	50	100	0.40	840
CGA1206MLA-26601E		20	26	29.7	37.3	58	200	0.70	600
CGA1206MLA-31551E		25	31	35.1	43.9	69	200	1.00	550
CGA1206MLA-38501E		30	38	42.3	52.7	81	200	1.10	500
CGA1206MLA-40181E		40	56	63.0	77.0	110	200	1.00	180

General Characteristics

Operating Temperature..... -40 °C to +125 °C
Storage Temperature..... -40 °C to +125 °C
Response Time.....<1 ns
Performance Standard ..... IEC 61000-4-2

Device Symbol

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

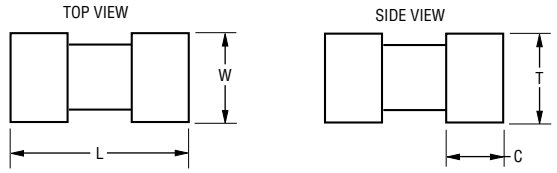
*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

Applications

- HDMI
- CANbus
- Ethernet
- GPS
- Camera links
- Sensors
- Touchscreen interfaces
- Circuits sensitive to ESD

ChipGuard® Automotive MLA Series Varistor ESD Clamp Protectors BOURNS®

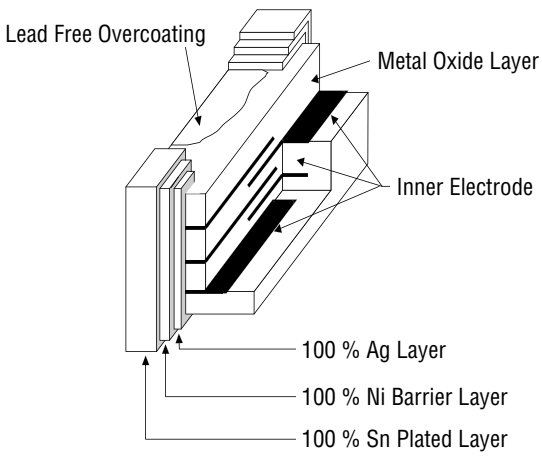
Product Dimensions



DIMENSIONS: MM / (INCHES)

Dim.	CGA0603MLA Series	CGA0805MLA Series	CGA1206MLA Series
L	1.60 ± 0.15 (0.063 ± 0.006)	2.00 ± 0.20 (0.079 ± 0.008)	3.20 ± 0.30 (0.126 ± 0.012)
W	0.80 ± 0.10 (0.031 ± 0.004)	1.25 ± 0.20 (0.049 ± 0.008)	1.60 ± 0.20 (0.063 ± 0.008)
T	0.80 ± 0.10 (0.031 ± 0.004)	0.90 ± 0.10 (0.035 ± 0.004)	0.80 ± 0.10 (0.031 ± 0.004)
C	0.30 ± 0.15 (0.012 ± 0.006)	0.50 ± 0.25 (0.020 ± 0.010)	0.50 ± 0.25 (0.020 ± 0.010)

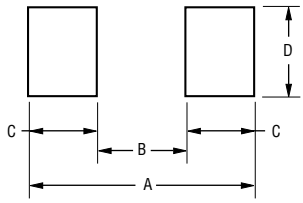
Construction



Environmental Characteristics

Moisture Sensitivity Level 1
ESD Classification (HBM) 3B

Recommended Pad Layout



Note: Print solder to a recommended thickness of 150 to 200 μm.

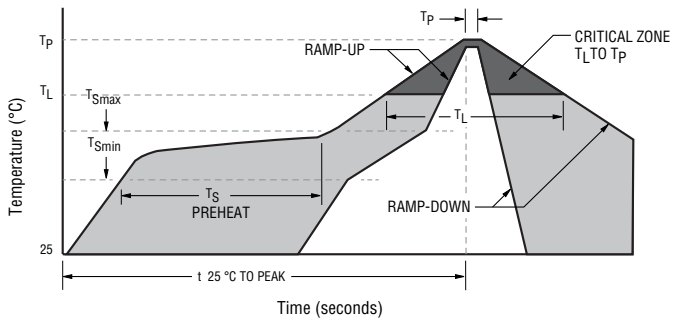
Dim.	CGA0603MLA Series	CGA0805MLA Series	CGA1206MLA Series
A	2.54 (0.100)	3.50 (0.137)	4.06 (0.160)
B	0.50 (0.020)	1.10 (0.043)	2.02 (0.080)
C	1.02 (0.040)	1.20 (0.047)	1.02 (0.040)
D	0.76 (0.030)	1.20 (0.047)	1.65 (0.065)

How to Order

CG A xx0x MLA - xx yyy E

- ChipGuard® Product Designator
- Automotive Series
- Package Option
  - 0603 = 1608 Package
  - 0805 = 2012 Package
  - 1206 = 3216 Package
- Multilayer Series Designator
- Maximum DC Working Voltage, V
  - (Current <10 μA)
- Capacitance, pF
  - (Example: 151 = 15x10¹ (150 pF)
- Tape & Reel Packaging
  - E = 4,000 pcs. per reel

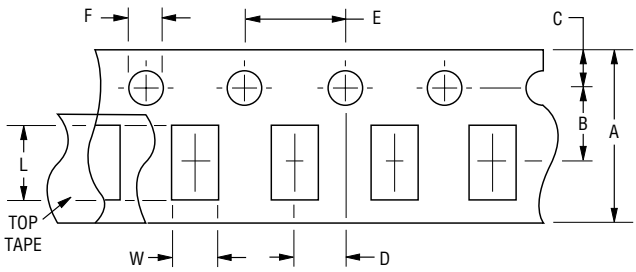
Solder Reflow Recommendations



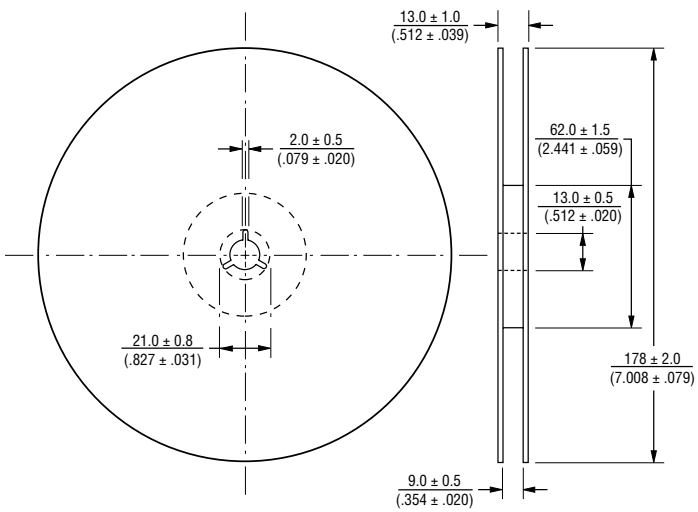
A	Stage 1 Preheat Ramp	Ambient to Preheating Temperature	30 °C/s max.
B	Stage 2 Preheat	Preheat min./max. Temperature Range	150 °C to 200 °C 60 s to 180 s
C	Stage 3 Preheat to Main Heating	Max. Time Above Stated Temperature	217 °C 60 s to 150 s
D	Main Heating	Max. Time Within 5 °C of Peak Temperature (260 °C)	255 °C 20 s to 4 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.
- Localized heating can also damage product.
- Do not thermally shock product in excess of 100 °C.
- Use a 30 W or less solder gun/iron for product repairs. Tip temperature maximum is 280 °C for less than 3 seconds.
- Do not touch the component directly with the soldering gun/iron.
- Excess solder volumes can damage the body of the product.

Packaging Dimensions



NOTES: TAPE MATERIAL IS PAPER. TAPE THICKNESS IS: 0.95 ± 0.05 (0.037 ± 0.002)



Dim.	CGA0603MLA Series	CGA0805MLA Series	CGA1206MLA Series
A	8.00 ± 0.30 (0.315 ± 0.012)		
B	3.50 ± 0.05 (0.138 ± 0.002)		
C	1.75 ± 0.10 (0.069 ± 0.004)		
D	2.00 ± 0.05 (0.079 ± 0.002)		
E	4.00 ± 0.10 (0.157 ± 0.004)		
F	1.50 ± 0.10 (0.059 ± 0.004)		
L	1.90 ± 0.15 (0.075 ± 0.006)	2.30 ± 0.15 (0.091 ± 0.006)	3.50 ± 0.15 (0.138 ± 0.006)
W	1.05 ± 0.15 (0.041 ± 0.006)	1.55 ± 0.15 (0.061 ± 0.006)	1.90 ± 0.15 (0.075 ± 0.006)

DIMENSIONS: MM (INCHES)

REV. F 03/25

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