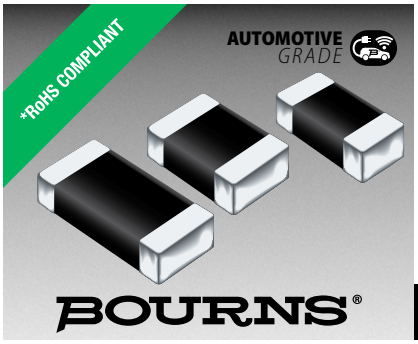


Features

- 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.
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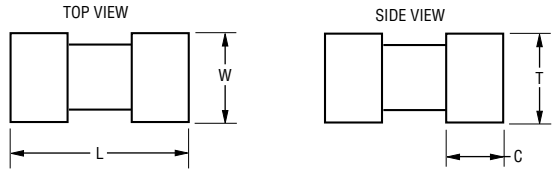
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Applications

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

ChipGuard® Automotive MLA Series Varistor ESD Clamp Protectors BOURNS®

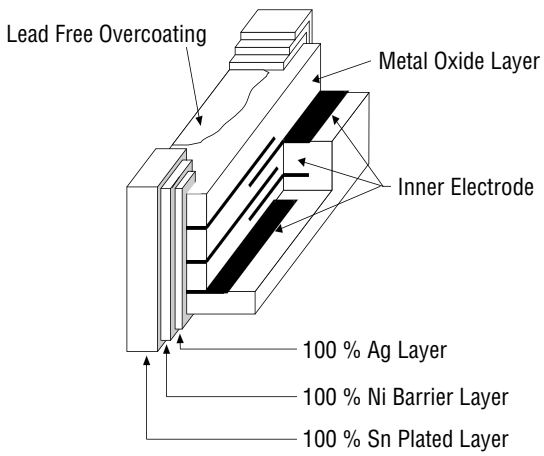
Product Dimensions



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)

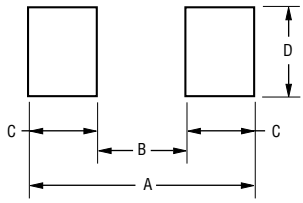
Construction



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

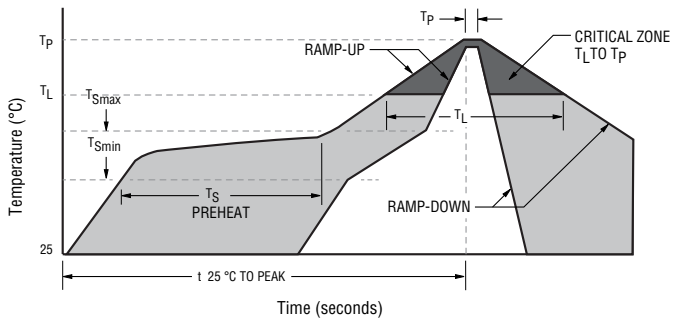
CG A xx0x MLA - xx yyy E

- 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

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Solder Reflow Recommendations

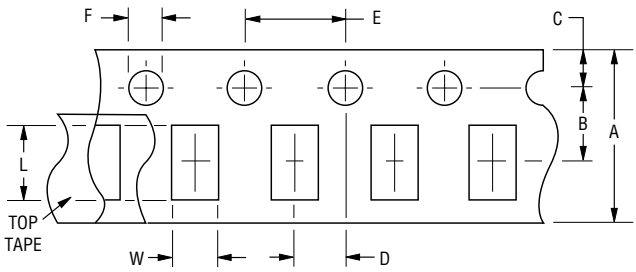


A	Stage 1 Preheat Ramp	Ambient to Preheating Temperature	30 °C/s max.
B	Stage 2 Preheat	Preheat min./max. Temperature Range	150 °C to 200 °C 60 s to 180 s
C	Stage 3 Preheat to Main Heating	Max. Time Above Stated Temperature	217 °C 60 s to 150 s
D	Main Heating	Max. Time Within 5 °C of Peak Temperature (260 °C)	255 °C 20 s to 4 s
E	Cool Down	Rate from Peak Temperature	6 °C/s max.

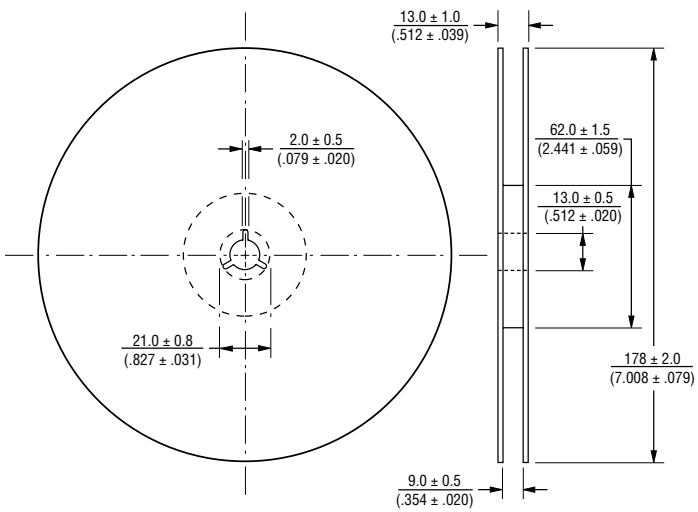
CAUTION:

- 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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