



Features

- Meets IEC 61000-4-5 standard
- Compact EIA 1210 size
- Quick response time (< 1.0 ns)
- High transient current capability
- Lead free
- AEC-Q200 compliant
- RoHS compliant*

Applications

- Power supplies
- Entertainment electronics
- Circuit board level protection against transient events
- CAN, LIN, FLEXRAY based modules
- Module load dump protection
- Motor/inductive load transient suppression

BVRA1210 Automotive Grade SMD Low Voltage Varistor Series

Description

The Bourns® BVRA1210 Low Voltage Multilayered Varistor Series is designed specifically for use in automotive circuits requiring surge protection. This series offers excellent transient energy absorption due to improved energy volume distribution and power dissipation. The BVRA1210 Series is available with working voltages from 11 to 100 VDC.

BVRA Series varistors are typically applied to protect integrated circuits and other components at the circuit board level.

Additional Information

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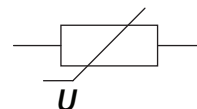
Electrical Characteristics @ 25 °C (unless otherwise noted)

Model	V _{rms} (V)	V _{DC} (V)	V _n Min. (V)	V _n Max. (V)	V _c (V)	I _{max} (A)	W _{max} (J)	C _P Typ. (pF)
	<10 μ A		1 mA DC		2.5 A @ 8/20 μ s	@ 8/20 μ s	@ 10/1000 μ s	@ 1 KHz
BVRA1210-09PF	9	11	12	16	40	400	1000	6200
BVRA1210-14PF	14	18	22	29	60	500	1200	3700
BVRA1210-18PF	18	26	31	38	65	400	1900	2600
BVRA1210-25PF	25	31	37	45	100	300	2000	1000
BVRA1210-34PF	34	48	54	67	125	300	2200	730
BVRA1210-46PF	46	60	69	83	135	450	2500	730
BVRA1210-50PF	50	65	73	91	165	300	2500	580
BVRA1210-60PF	60	85	90	110	190	400	2800	310
BVRA1210-75PF	75	100	108	132	220	200	2800	180

Environmental Characteristics

Operating Temperature..... -40 °C to +125 °C
 Storage Temperature..... -40 °C to +125 °C
 Standard..... IEC 61000-4-5

Device Symbol



How to Order

BVRA 1210 - nn PF R	
Series Designator	BVR = BVR Series
Automotive Grade	
Model Size	1210 = 1210 Package
Max. RMS Voltage	09 = 9 V 46 = 46 V 14 = 14 V 50 = 50 V 18 = 18 V 60 = 60 V 25 = 25 V 75 = 75 V 34 = 34 V
RoHS Compliance	PF = Lead free
Packaging	R = Tape and reel packaging (2,000 pcs. per 7-inch reel)

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www.bourns.com



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.

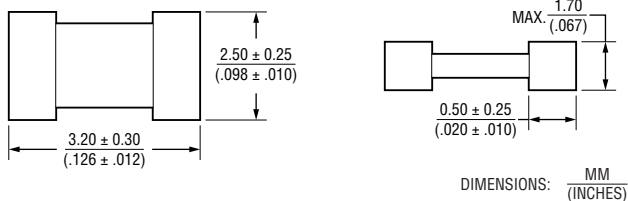
Users should verify actual device performance in their specific applications.

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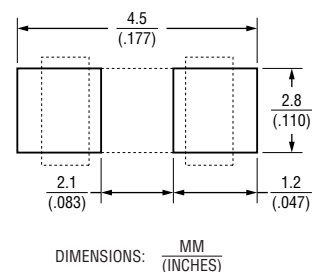
BVRA1210 Automotive Grade SMD Low Voltage Varistor Series

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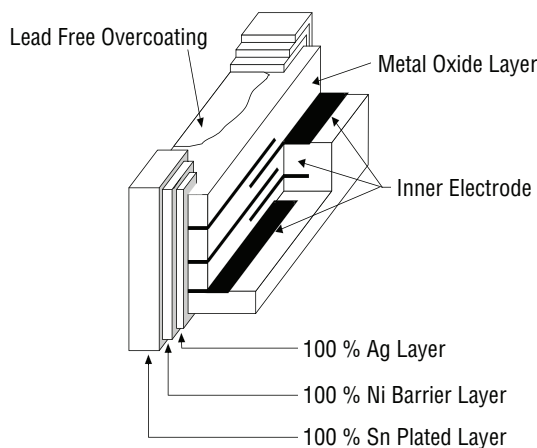
Product Dimensions



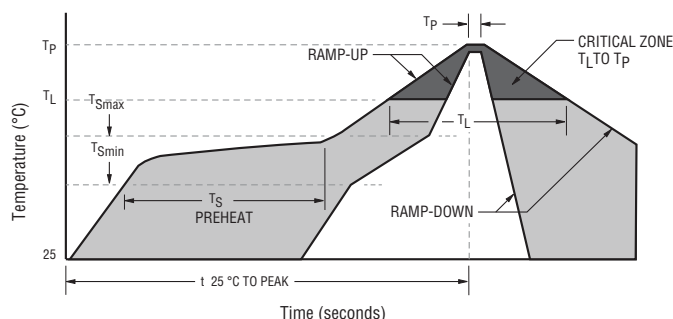
Recommended Pad Layout



Construction



Solder Reflow Recommendations



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:

- This product can be damaged by rapid heating, cooling or localized heating.
- Heat shocks should be avoided. Preheating and gradual cooling 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.
- Excess solder volume can damage the body of the product.

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Technical drawing of a circular component with a central feature and a side view showing a rectangular profile with internal features.

Top View Dimensions:

- Overall Diameter: 178.0 ± 2.0 ($7.008 \pm .079$)
- Central Feature Diameter: 2.0 ± 0.05 ($.079 \pm .002$)
- Distance from Center to Feature: 21.0 ± 0.8 ($.827 \pm .031$)
- Distance from Feature to Edge: 9.0 ± 0.5 ($.354 \pm .020$)
- Distance from Feature to Edge (Opposite): 13.0 ± 1.0 ($.512 \pm .039$)
- Distance from Feature to Edge (Bottom): 13.0 ± 0.5 ($.512 \pm .020$)
- Distance from Feature to Edge (Bottom Opposite): 62.0 ± 1.5 ($2.441 \pm .059$)

Side View Dimensions:

- Overall Width: 1.50 ± 0.10 ($.059 \pm .004$)
- Overall Height: 8.00 ± 0.30 ($.315 \pm .012$)
- Distance from Top to Feature: 1.50 ± 0.10 ($.059 \pm .004$) DIA.
- Distance from Feature to Edge: 2.00 ± 0.05 ($.079 \pm .002$)
- Distance from Feature to Edge (Opposite): 4.00 ± 0.10 ($.157 \pm .004$)
- Distance from Feature to Edge (Opposite Opposite): 4.00 ± 0.10 ($.157 \pm .004$)
- Distance from Feature to Edge (Opposite Opposite Opposite): 1.75 ± 0.10 ($.069 \pm .004$)
- Distance from Feature to Edge (Opposite Opposite Opposite Opposite): 3.50 ± 0.05 ($.138 \pm .002$)
- Distance from Feature to Edge (Opposite Opposite Opposite Opposite Opposite): 3.63 ± 0.10 ($.143 \pm .004$)
- Distance from Feature to Edge (Opposite Opposite Opposite Opposite Opposite Opposite): 2.84 ± 0.10 ($.112 \pm .004$)

USER DIRECTION OF FEED →

QTY: 2000 PCS. PER REEL

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

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