



## Features

- Meets IEC 61000-4-5 standard
- Compact EIA 1812 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

## BVRA1812 Automotive Grade SMD Low Voltage Varistor Series

### Description

The Bourns® BVRA1812 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 BVRA1812 Series is available with working voltages from 14 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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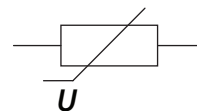
### Electrical Characteristics @ 25 °C (unless otherwise noted)

Model	V <sub>rms</sub> (V)	V <sub>DC</sub> (V)	V <sub>n</sub> Min. (V)	V <sub>n</sub> Max. (V)	V <sub>c</sub> (V)	I <sub>max</sub> (A)	W <sub>max</sub> (J)	C <sub>P</sub> Typ. (pF)
	<10 µA		1 mA DC		5 A @ 8/20 µs	@ 8/20 µs	@ 10/1000 µs	@ 1 KHz
BVRA1812-10PF	10	14	16	22	42	800	2500	8400
BVRA1812-18PF	18	26	31	38	62	800	3000	3200
BVRA1812-21PF	21	30	37	46	70	800	3700	3950
BVRA1812-30PF	30	38	46	54	80	800	4200	2500
BVRA1812-35PF	35	45	50	62	90	500	4000	1800
BVRA1812-40PF	40	56	67	84	135	800	5000	1800
BVRA1812-50PF	50	65	73	91	140	800	5200	1500
BVRA1812-60PF	60	85	90	110	145	400	5800	1100
BVRA1812-75PF	75	100	108	132	200	500	6000	700

### 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 1812 - nn PF R	
Series Designator	BVR = BVR Series
Automotive Grade	
Model Size	1812 = 1812 Package
Max. RMS Voltage	10 = 10 V      40 = 40 V 18 = 18 V      50 = 50 V 21 = 21 V      60 = 60 V 30 = 30 V      75 = 75 V 35 = 35 V
RoHS Compliance	PF = Lead free
Packaging	R = Tape and reel packaging (1,000 pcs. per 7-inch reel)

**BOURNS®**

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[www.bourns.com](http://www.bourns.com)



**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.

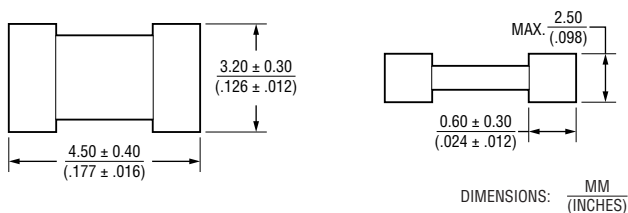
Users should verify actual device performance in their specific applications.

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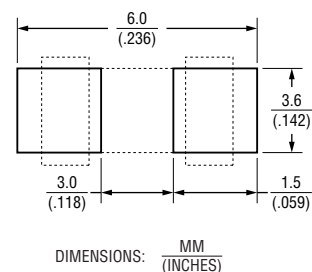
## BVRA1812 Automotive Grade SMD Low Voltage Varistor Series

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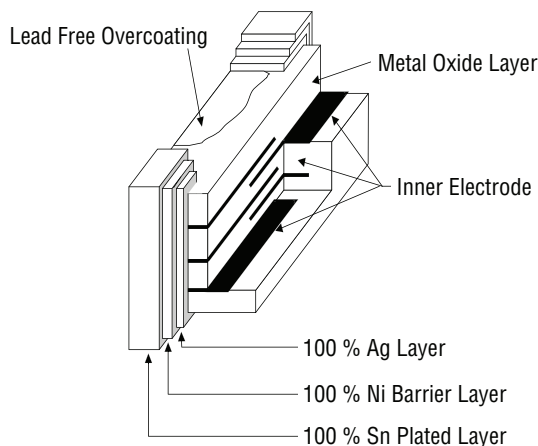
### Product Dimensions



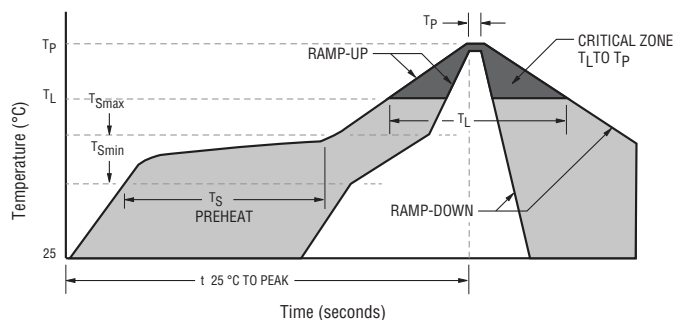
### Recommended Pad Layout



### 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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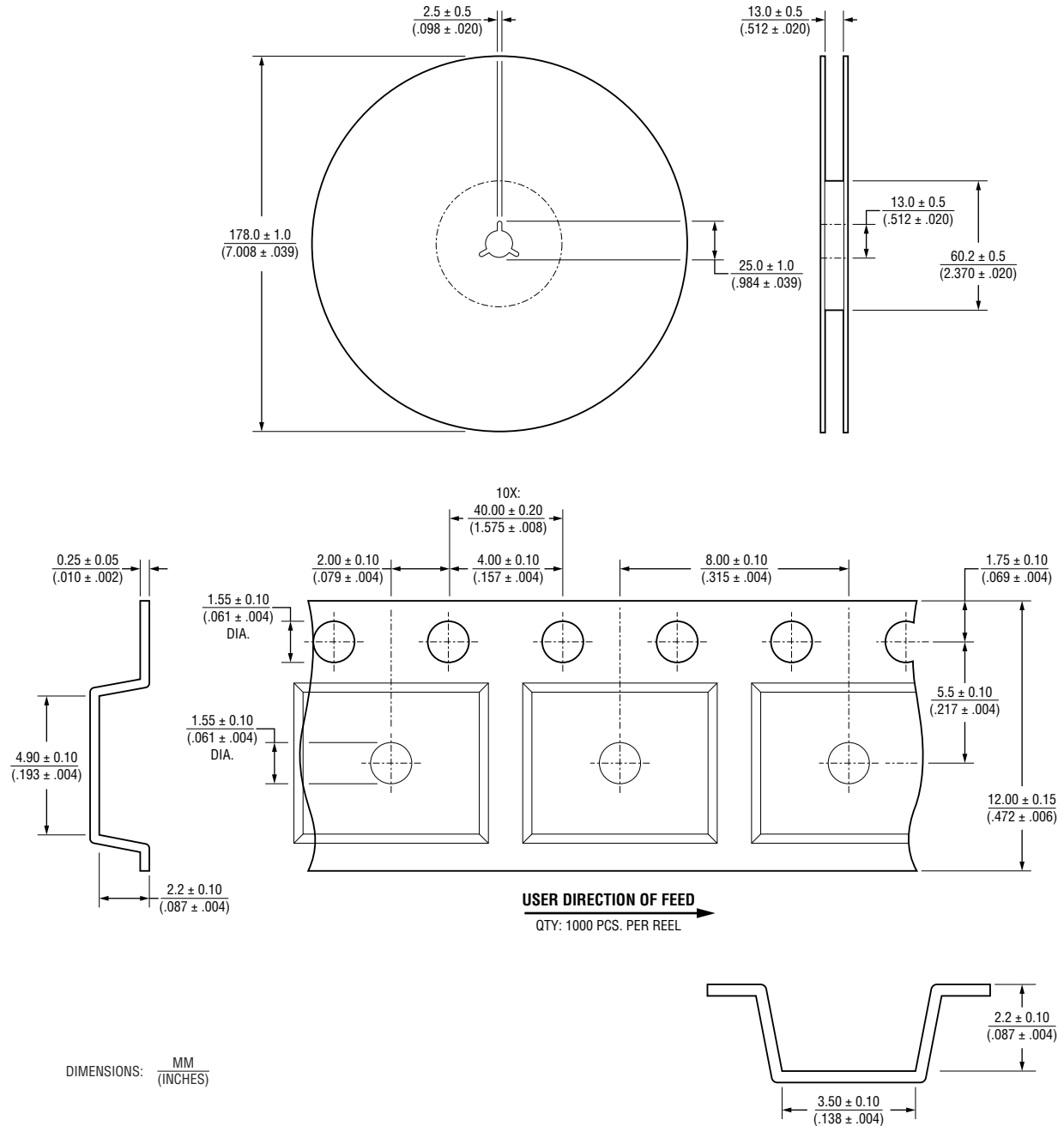
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## Packaging Dimensions



REV. 04/25

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