

## Features

- Planar technology primarily for BMS signal applications
- Working voltage: up to 1000 VDC
- Hi-Pot: 4300 VDC or 2500 VAC
- Basic insulation compliant with IEC 60664/62368-1
- Clearance distance 8.2 mm minimum, overvoltage category II, up to 4.5 km altitude
- Creepage distance 8.2 mm minimum, pollution degree 2, material group CTI I ( $\geq 600$  V)
- Partial discharge up to 1200 V per IEC 60664
- AEC-Q200 compliant
- RoHS compliant\*

## SM91808AL BMS Planar Transformer

### Additional Information

Click these links for more information:



### Electrical Specifications @ 25 °C

OCL (100 kHz / 0.1 V) (-40 °C to +125 °C)	150~450 $\mu$ H
Leakage Inductance (100 kHz / 0.1 V)	1.2 $\mu$ H max. (0.82 $\mu$ H typ.)
DCR	
Pri. and Sec.	1.4 $\Omega$ max.
Interwinding Capacitance (100 kHz / 0.1 V)	20 pF max.
Turns Ratio	1 : 1 $\pm$ 2 %
Insertion Loss	
4 MHz	-0.25 dB max.
Return Loss	
4 MHz	-16 dB min.
Hi-Pot (1 mA, 60 sec.)	
.....	4300 VDC or 2500 VAC
Insulation Resistance	50 M $\Omega$ min.
Partial Discharge Level	1200 V
per IEC 60664	
Impulse Voltage	up to 6 kV, 1.2/50 $\mu$ s
with conformal coating	
Working Voltage	up to 1000 VDC
Operating Temperature Range	-40 °C to +125 °C
Storage Temperature Range	-25 °C to +85 °C
Moisture Sensitivity Level	1

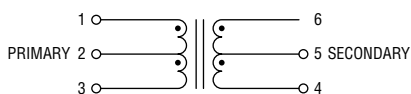
### Packaging Specification

Tape & Reel..... 800 pcs. per 13-inch reel

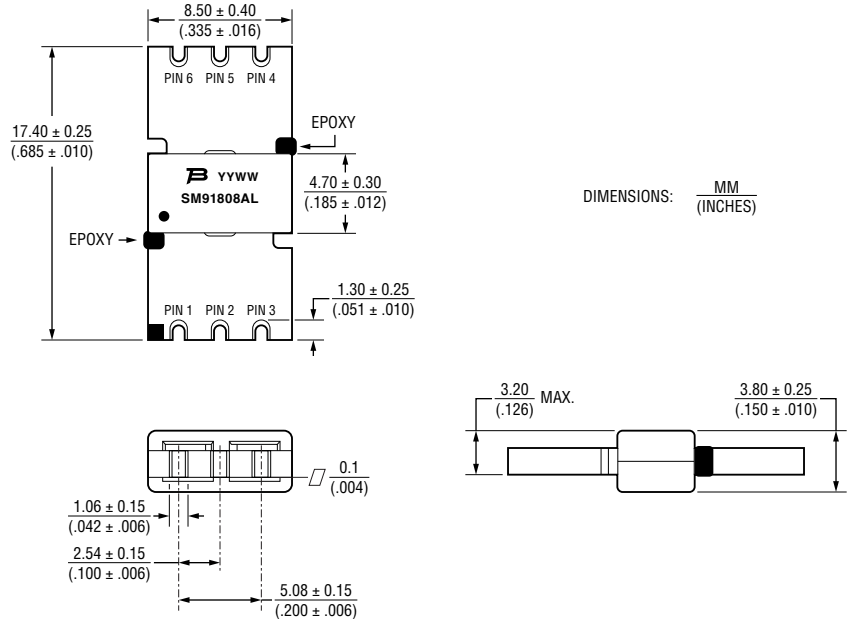
### How To Order

Model	SM91808 A L - E
AEC-Q200 Compliancy Designator	
Termination	L = Tin (RoHS Compliant)
Packaging	E = Tape & Reel

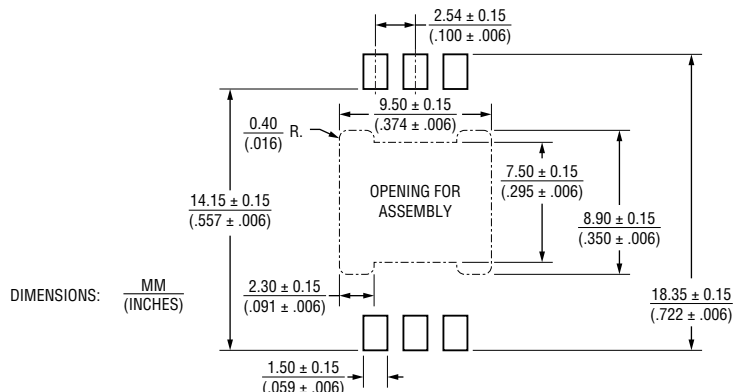
### Electric Schematic



### Product Dimensions



### Recommended Layout



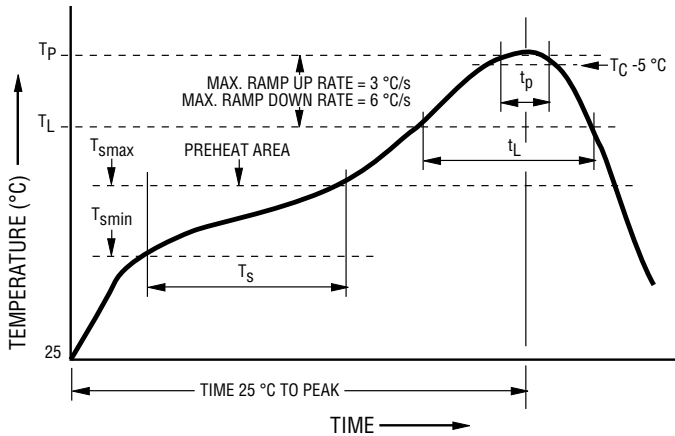
**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*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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# SM91808AL BMS Planar Transformer



## Solder Reflow Recommendations



Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. ( $T_{smin}$ ) Temperature Max. ( $T_{smax}$ ) Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	150 °C 200 °C 60~120 seconds
Ramp Up Rate ( $T_L$ to $T_p$ )	3 °C / second max.
Liquidous Temperature ( $T_L$ ) Time ( $t_L$ ) maintained above $T_L$	217 °C 60~150 seconds
Peak Package Body Temperature ( $T_p$ )	$T_p \leq T_c$ (see table below)
Time ( $t_p$ )* within 5 °C of the specified classification temperature ( $T_c$ )	< 30 seconds*
Ramp Down Rate ( $T_p$ to $T_L$ )	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

## Pb-Free Process Classification Temperatures ( $T_c$ )

Package Thickness	Volume mm <sup>3</sup> < 350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> > 2000
< 1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
> 2.5 mm	250 °C	245 °C	245 °C

Specifications are subject to change without notice.

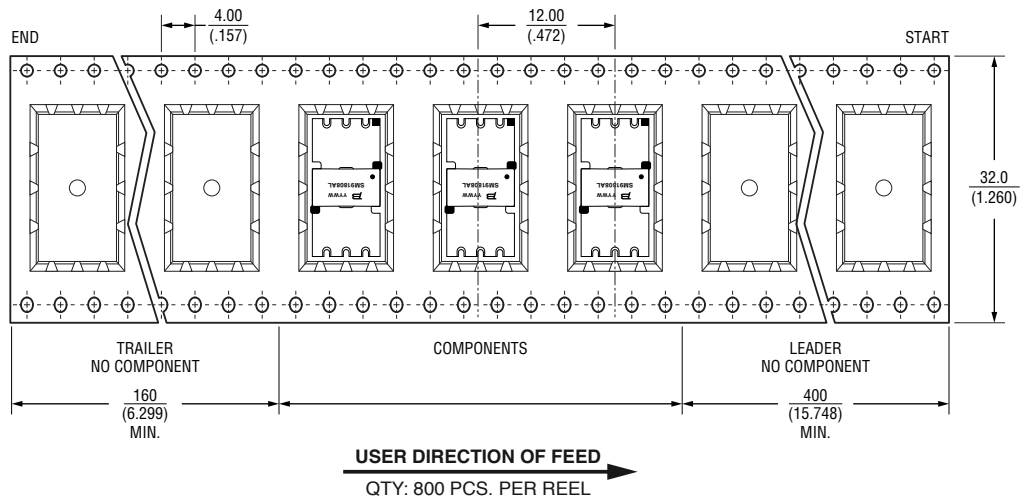
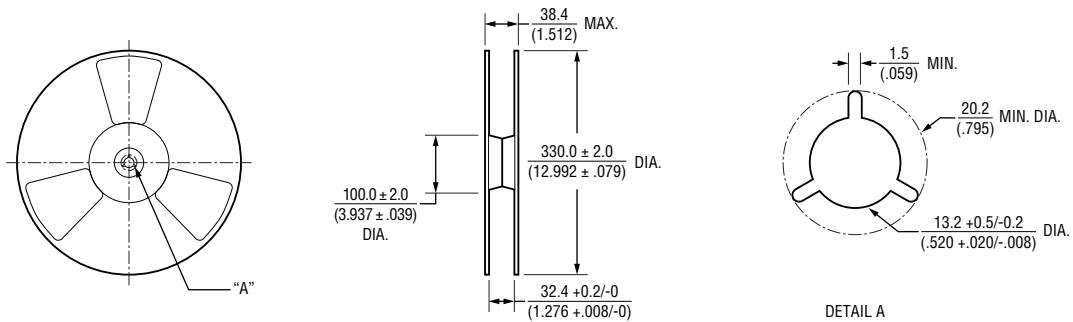
Users should verify actual device performance in their specific applications.

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# SM91808AL BMS Planar Transformer

**BOURNS®**

## Packaging Specifications



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

**BOURNS®**

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Users should verify actual device performance in their specific applications.

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