



## 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
- Creepage distance 5 mm minimum, overvoltage category II
- Clearance distance 5 mm minimum up to 5000 m altitude, pollution degree 2, material group CTI I
- Developed for use with Analog Device's LTC6815 series, NXP's MC33771C series and Texas Instruments' model BQ79616
- AEC-Q200 compliant
- RoHS compliant\* and halogen free\*\*

## SM91801AL 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..... 1.2  $\Omega$  max.  
Interwinding Capacitance ..... 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 4 kV, 1.2/50  $\mu$ s  
with conformal coating  
Working Voltage ..... up to 1000 VDC  
Operating Temperature  
..... -40 °C to +125 °C  
Storage Temperature (Component)  
..... -40 °C to +125 °C  
Moisture Sensitivity Level..... 1

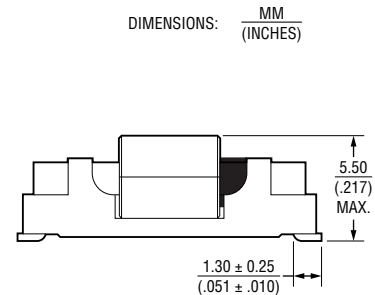
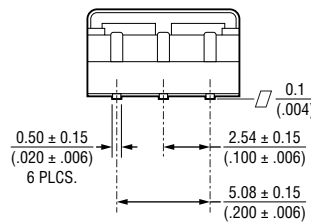
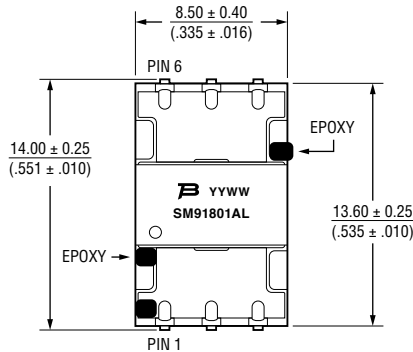
### Packaging Specification

Tape & Reel..... 600 pcs. per 13-inch reel

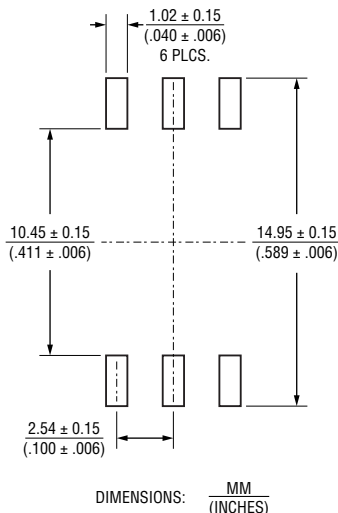
### How To Order

Model SM91801 A L - E  
AEC-Q200 Compliancy Designator \_\_\_\_\_  
Termination \_\_\_\_\_  
L = Tin (RoHS Compliant)  
Packaging \_\_\_\_\_  
E = 600 pcs. per 13-inch Reel

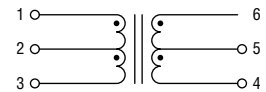
### Product Dimensions



### Recommended Layout



### Electric Schematic



### Agency Recognition

Agency	Category	File No.
UL	UL62368-1	<a href="#">E515965</a>

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

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

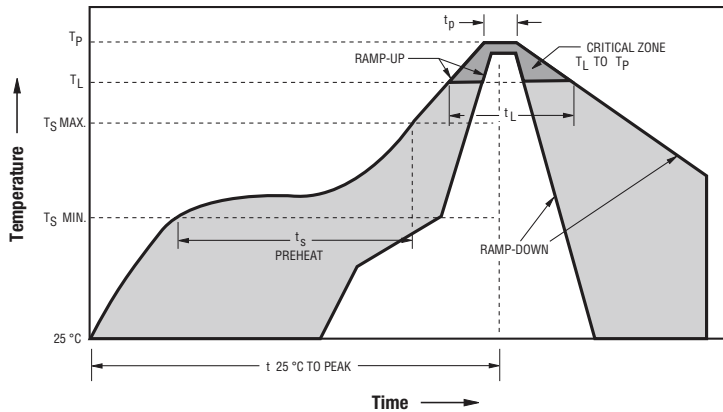
\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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# SM91801AL BMS Planar Transformer

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## Reflow Solder Profile



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate	3 °C / second max.
PREHEAT: Temperature Min. ( $T_{Smin}$ ) Temperature Max. ( $T_{Smax}$ ) Time ( $T_{Smin}$ to $T_{Smax}$ )	150 °C 200 °C 60~180 seconds
Liquidus Temperature ( $T_L$ )	217 °C
Time Above Liquidus Temperature ( $t_L$ )	60~150 seconds
Peak Temperature ( $T_P$ )	245-250 °C
Time within 5 °C of Actual Peak Temperature ( $t_p$ )	20~40 seconds
Ramp-Down Rate from Peak Temperature	6 °C / second max
Time 25 °C to Peak Temperature ( $T_P$ )	8 minutes max.
Do Not Exceed	250 °C

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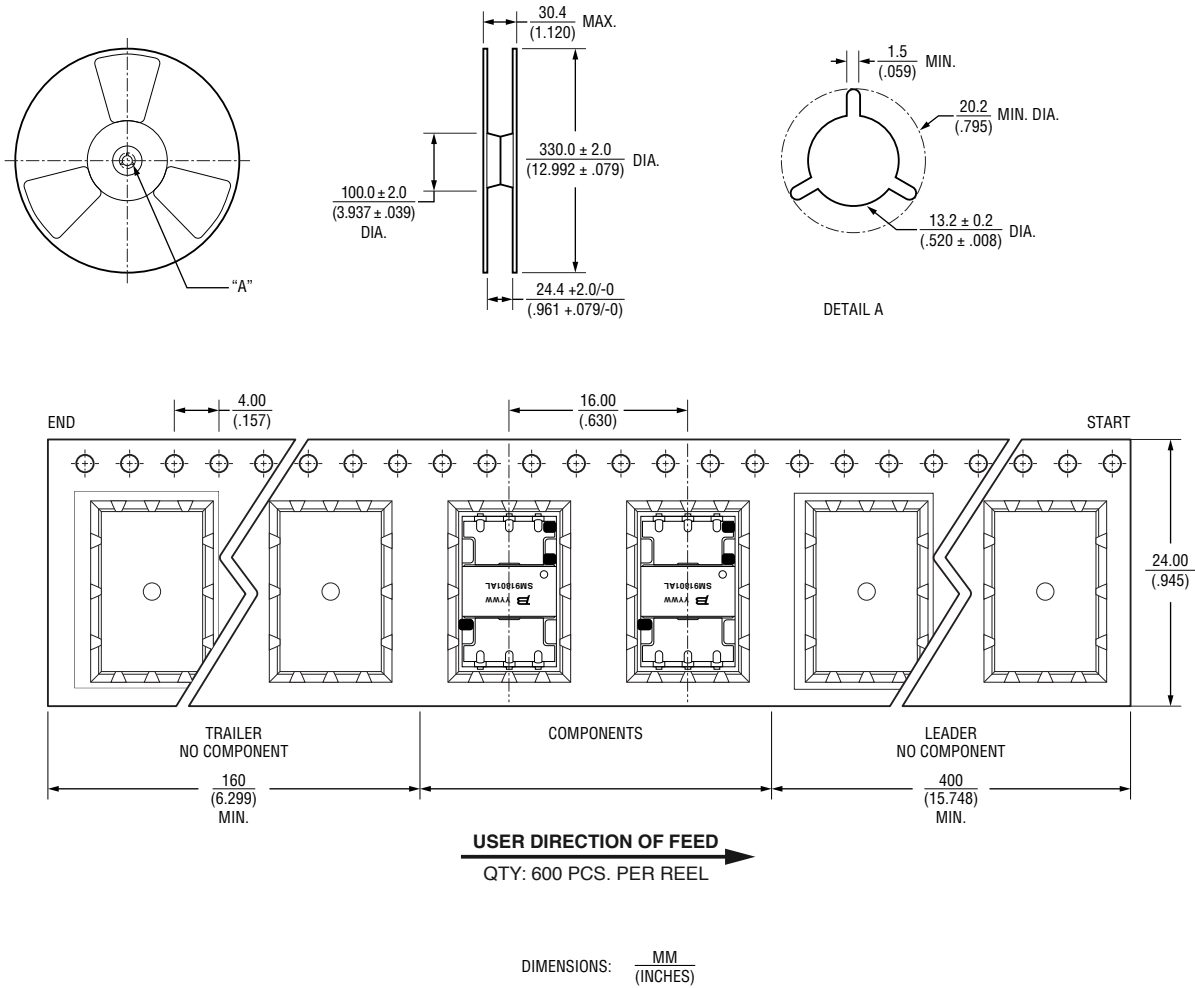
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# SM91801AL BMS Planar Transformer

**BOURNS®**

## Packaging Specifications



REV. 02/24

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