

PRELIMINARY



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
- **UL** recognized per UL 62368-1, File No. [E515965](#)

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 μ H
Leakage Inductance (100 kHz / 0.1 V)
..... 1.2 μ H max. (0.82 μ H typ.)
DCR
Pri. and Sec. 1.2 Ω 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 Ω min.
Partial Discharge Level 1200 V
per IEC 60664
Impulse Voltage up to 4 kV, 1.2/50 μ s
with conformal coating
Working Voltage up to 1000 VDC
Operating Temperature
..... -40 °C to +125 °C
Storage Temperature (Component)
..... -25 °C to +85 °C
Moisture Sensitivity Level 1

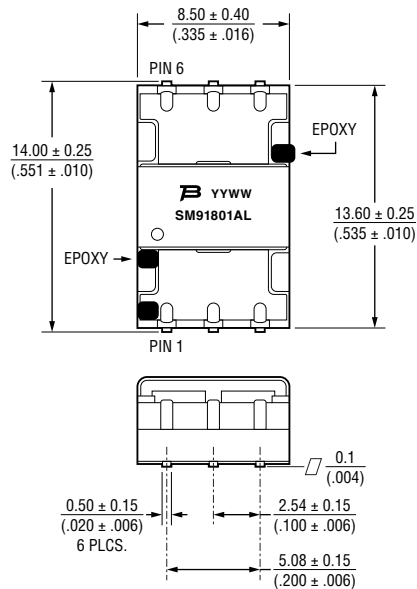
Packaging Specification

Tape & Reel 600 pcs. per 13-inch reel

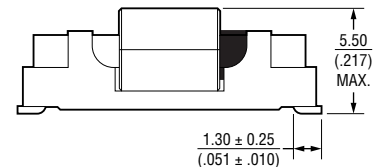
How To Order

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

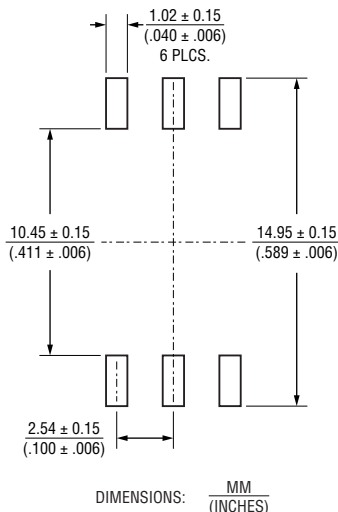
Product Dimensions



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

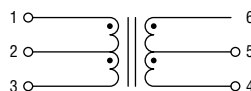


Recommended Layout



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

Electric Schematic



Agency Recognition

Agency	Agency File No.	Category
UL	UL62368-1	E515965

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WARNING Cancer and Reproductive Harm 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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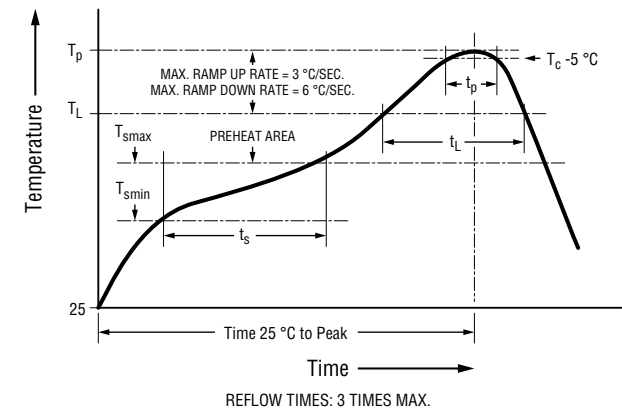
Features (Continued)

- AEC-Q200 compliant
- RoHS compliant* and halogen free**

SM91801AL BMS Planar Transformer

BOURNS®

Soldering Profile



Profile Feature	Pb Free Assembly
Preheat - 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 within 5 °C of the specified classification to 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.

Pb-Free Process Classification Temperatures (T_c)

Package Thickness (mm)	Volume mm ³ <350	Volume mm ³ 350~2000	Volume mm ³ >2000
<1.6	260 °C	260 °C	260 °C
1.6 ~ 2.5	260 °C	250 °C	245 °C
>2.5	250 °C	245 °C	245 °C

Refer to IPC/JEDEC J-STD-020.

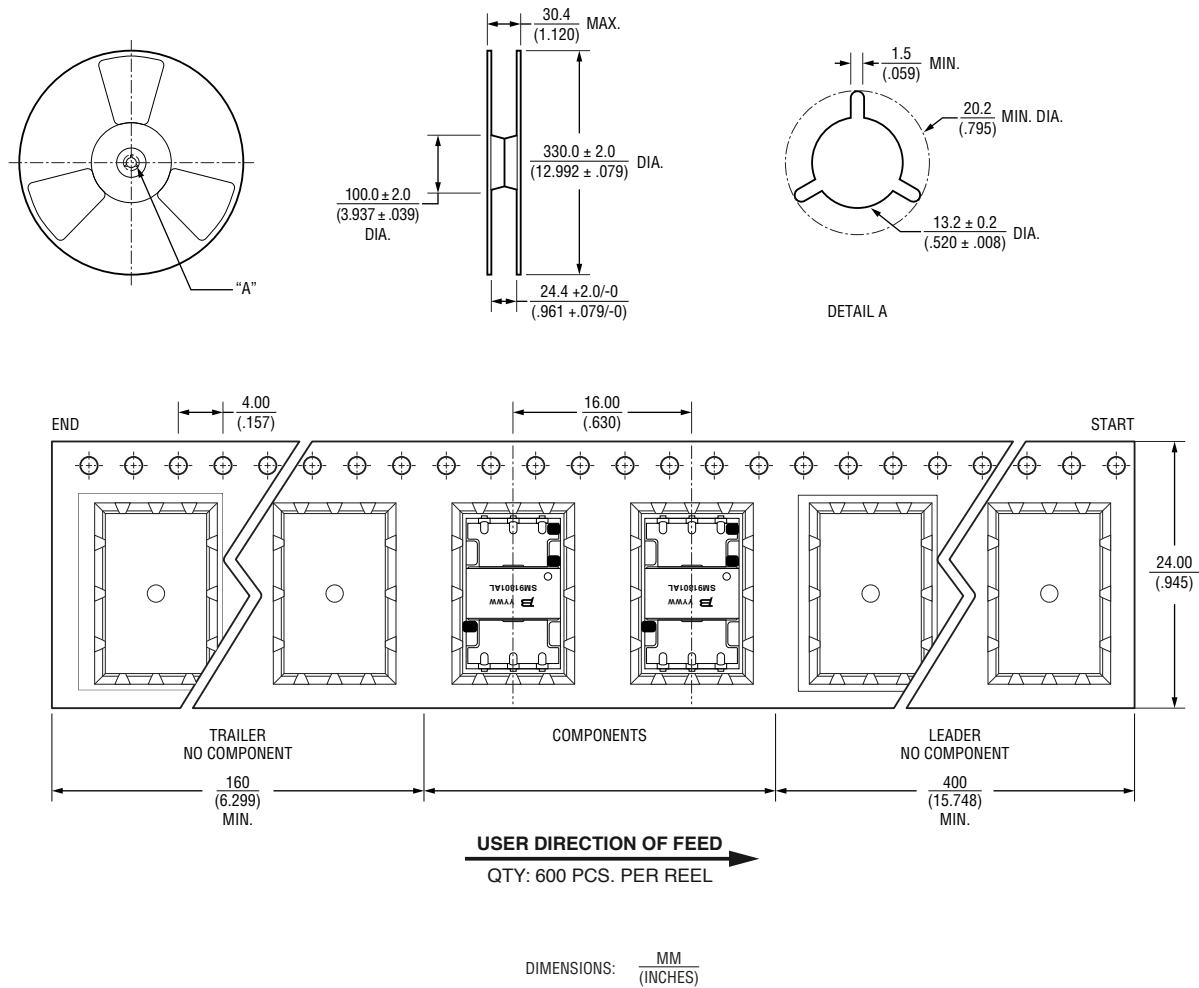
NOTE: This part has been tested under these reflow conditions. Deviations, especially higher temperatures or longer duration, could impact performance.

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SM91801AL BMS Planar Transformer

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Packaging Specifications



REV. 08/24

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