

Features

- Planar technology for BMS signal applications
- Working voltage up to 1000 VDC
- Hi-Pot: 4300 VDC or 2500 VAC
- Basic insulation in compliance with IEC 60664-1 / IEC 62368-1 / IEC 61558-1
- Clearance distance >5.5 mm, up to 2 km altitude
- Creepage distance >5.5 mm, overvoltage category II, pollution degree 2, material group CTI I
- Partial discharge up to 1200 V per IEC 60664
- AEC-Q200 compliant
- RoHS compliant*

SM91803AL BMS Planar Transformer

Additional Information

Click these links for more information:



Electrical Specifications @ 25 °C

Inductance (100 kHz / 0.1 V) (-40 °C to +125 °C).....	150 μH ~ 450 μH
Leakage Inductance (100 kHz / 0.1 V)	1.2 μH max. (0.82 μH typ.)
DCR	
Pri and Sec.	1.2 Ω max.
Interwinding Capacitance (100 kHz / 0.1 V).....	20 pF max.
Turns Ratio.....	1:1 ±2 %
Insertion Loss	
4 MHz	-0.25 dB max.
Return Loss	
4 MHz	-16 dB min.
Hi-Pot (1 mA, 60 S)	4300 VDC or 2500 VAC
Insulation Resistance	50 MΩ min.
Partial Discharge Level	1200 V per IEC 60664
Impulse Voltage	up to 6 kV, 1.2/50 μs 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

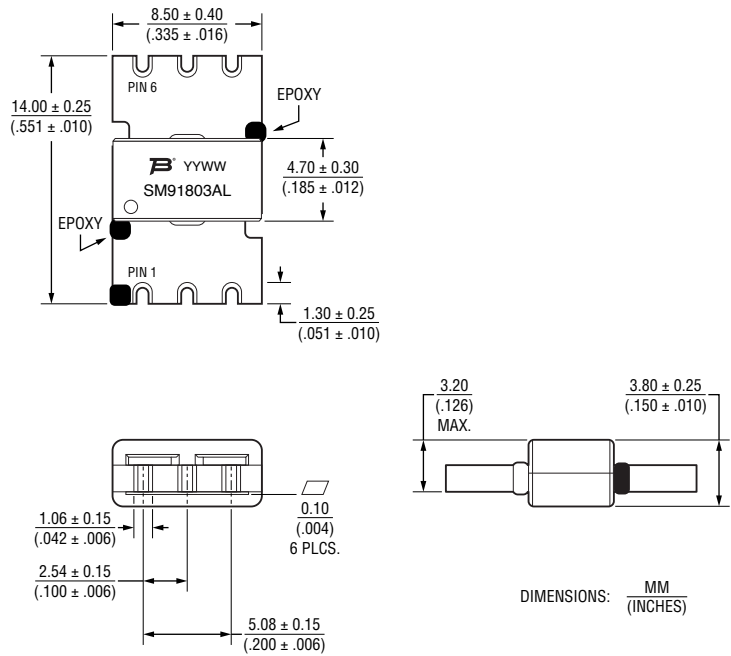
Packaging Specification

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

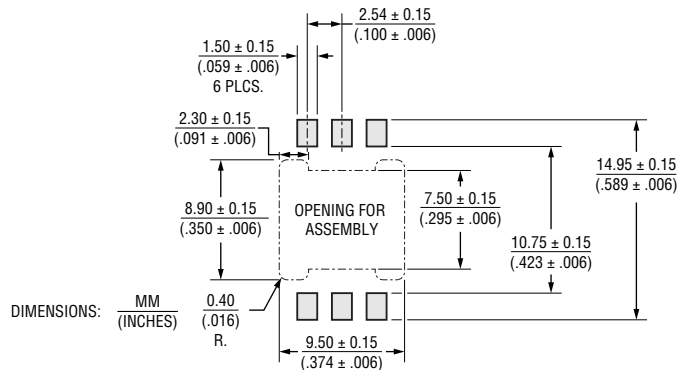
How To Order

SM91803 A L - E
 Model _____
 AEC-Q200 Compliancy Designator _____
 Termination _____
 L = Tin (RoHS Compliant)
 Packaging _____
 E = Tape & Reel

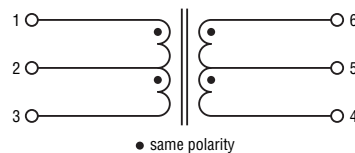
Product Dimensions



Recommended Layout



Electrical Schematic



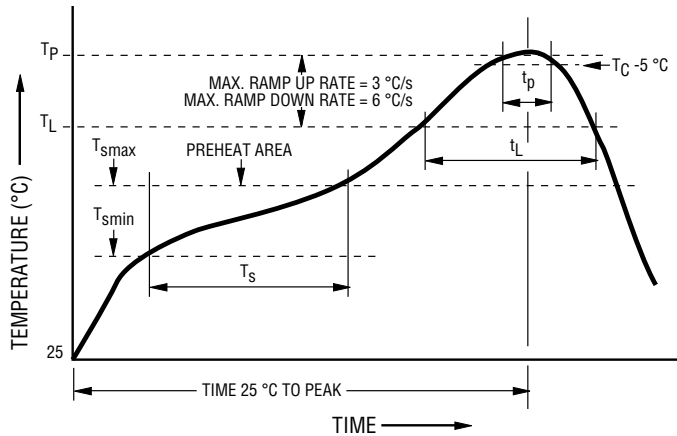
WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*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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SM91803AL 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 ³ < 350	Volume mm ³ 350 - 2000	Volume mm ³ > 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

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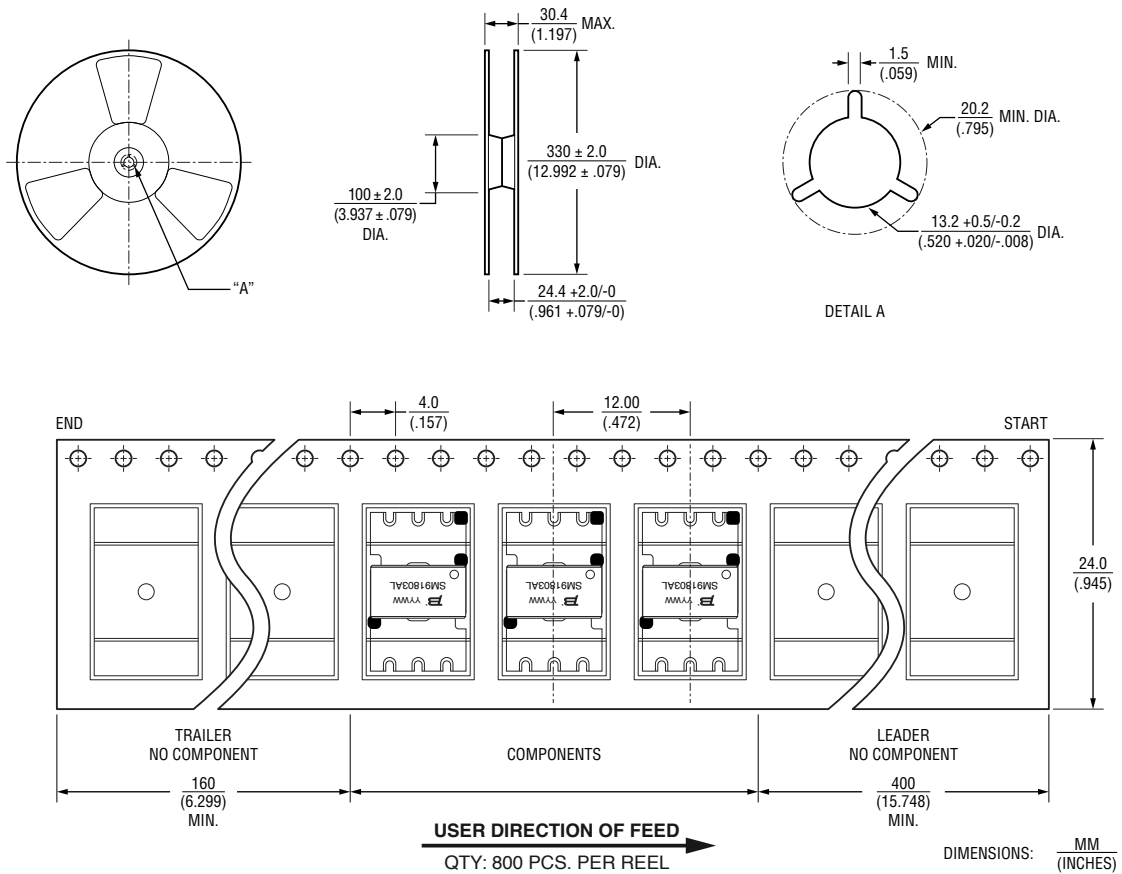
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SM91803AL BMS Planar Transformer

BOURNS®

Packaging Specifications

Specifications and tolerances comply with EIA-481 requirements.



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REV. 03/25

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