



Features

- Planar technology primarily for BMS signal applications
- Working voltage: up to 1000 VDC
- Hi-Pot: 4300 VDC or 3000 VAC
- Basic insulation compliant with IEC 60664/61558/62368-1
- Clearance distance 8.2 mm minimum, pollution degree 2, material group CTI I
- Creepage distance 8.2 mm minimum, overvoltage category II
- Partial discharge up to 1200 V per IEC 60664
- Developed for use with Analog Device's LTC6815 series, NXP's MC33771C series and TI's model BQ79616
- AEC-Q200 compliant
- RoHS compliant* and halogen free**

SM91806AL 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..... 1.4 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 3000 VAC
Insulation Resistance 50 M Ω min.
Partial Discharge Level..... 1200 V
per IEC 60664
Impulse Voltage up to 6 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)
..... -40 °C to +125 °C
Moisture Sensitivity Level..... 1

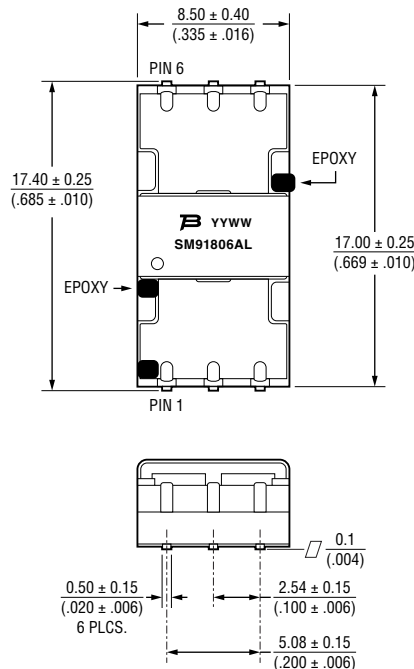
Packaging Specification

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

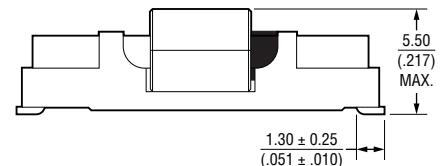
How To Order

Model **SM91806 A L - E**
AEC-Q200 Compliancy Designator
Termination
L = Tin (RoHS Compliant)
Packaging
E = 600 pcs. per 13-inch Reel

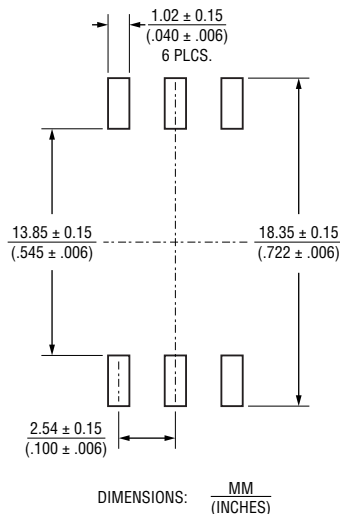
Product Dimensions



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

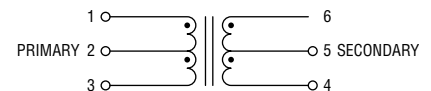


Recommended Layout



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

Electric Schematic



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WARNING Cancer and Reproductive Harm

www.P65Warnings.ca.gov

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

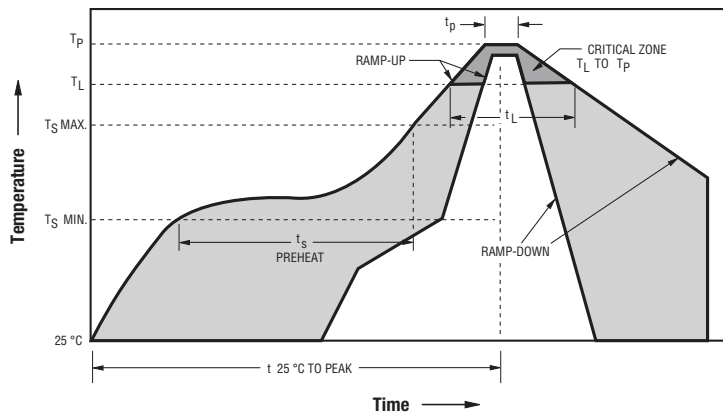
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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SM91806AL 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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Technical drawing of a 3-bladed propeller. The drawing includes three views: a plan view (left), a side view (middle), and a detail view (right).

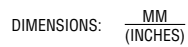
Plan View (Left): Shows the propeller from above. A leader line points to the central hub area, labeled "A".

Side View (Middle): Shows the propeller from the side. Dimensions include:

- Hub diameter: 100.0 ± 2.0 (3.937 $\pm$.039) DIA.
- Blade length: 38.4 (1.512) MAX.
- Blade thickness: 1.5 (.059) MIN.
- Blade width at base: $32.4 \pm 0.2/-0$ (1.276 $\pm$.008/-0)
- Blade width at tip: 330.0 ± 2.0 (12.992 $\pm$.079) DIA.

Detail View (Right): Labeled "DETAIL A", showing a close-up of the central hub. Dimensions include:

- Hub diameter: 20.2 ± 0.2 (.795) MIN. DIA.
- Blade width at base: 13.2 ± 0.2 (.520 $\pm$.008) DIA.



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