



## Features

- Improved design for automation
- Working voltage: 1000 VDC
- Hi-Pot: 4300 VDC
- Single channel with integrated choke
- Functional insulation
- Developed for use with Analog Device's Model LTC6804/681X, NXP's Model MC3377X and Texas Instruments Model BQ79616
- AEC-Q200 compliant
- RoHS compliant\* and halogen free\*\*

## SM91542AL BMS Transformer

### Additional Information

Click these links for more information:



### Electrical Specifications @ 25 °C

|                                               |                    |
|-----------------------------------------------|--------------------|
| OCL (100 kHz / 0.1 V)<br>(-40 °C to +125 °C)  | 150-450 $\mu$ H    |
| Leakage Inductance (100 kHz / 0.1 V)<br>..... | 0.5 $\mu$ H max.   |
| DCR                                           |                    |
| Transformer Side .....                        | 0.45 $\Omega$ max. |
| CM Choke Side .....                           | 0.85 $\Omega$ max. |
| Cww.....                                      | 20 pF max.         |
| Turns Ratio .....                             | 1 : 1 $\pm$ 2 %    |
| Insertion Loss                                |                    |
| 4 MHz.....                                    | -0.25 dB max.      |
| Return Loss (Z out = 100 $\Omega$ )           |                    |
| 4 MHz.....                                    | -22 dB min.        |
| CMRR                                          |                    |
| 1-100 MHz.....                                | -35 dB min.        |
| 100-200 MHz.....                              | -28 dB min.        |
| Hi-pot (1 mA, 60 S).....                      | 4300 VDC           |
| Working Voltage .....                         | 1000 VDC           |
| Operating Temperature                         |                    |
| .....                                         | -40 °C to +125 °C  |
| Storage Temperature (Component)               |                    |
| .....                                         | -50 °C to +125 °C  |
| Moisture Sensitivity Level .....              | 1                  |
| ESD Classification (HBM).....                 | N/A                |

### Packaging Specification

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

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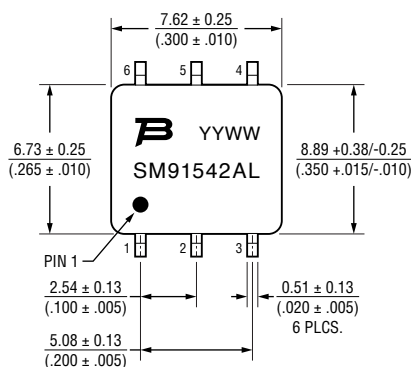
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The Americas: Tel: +1-951 781-5500

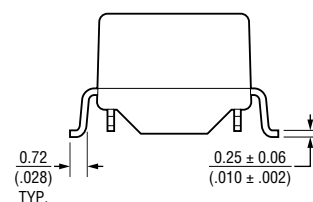
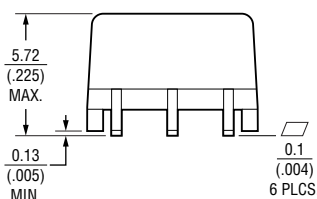
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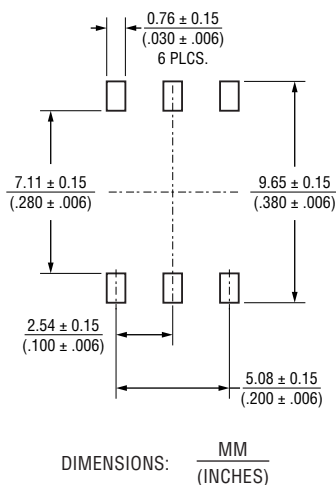
### Product Dimensions



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

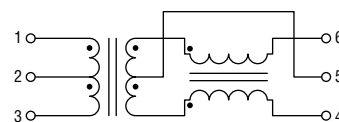


### Recommended Layout



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

### Electric Schematic



### How To Order

**SM91542 A L - E**

Model \_\_\_\_\_  
AEC-Q200 Compliancy Designator \_\_\_\_\_  
Termination \_\_\_\_\_  
L = Tin (RoHS Compliant)  
Packaging \_\_\_\_\_  
E = 800 pcs. per 13-inch Reel



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

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

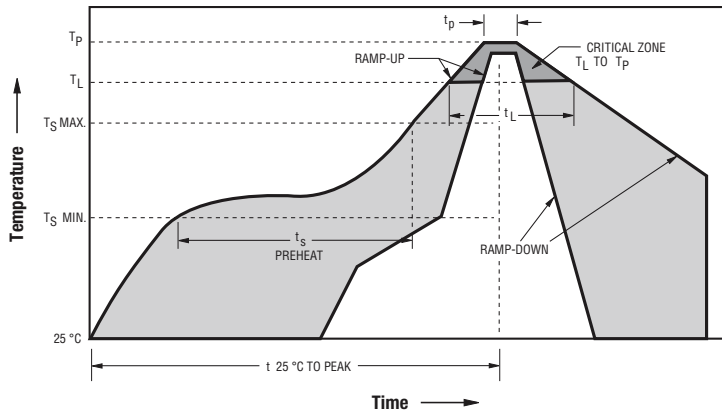
\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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# SM91542AL BMS Transformer

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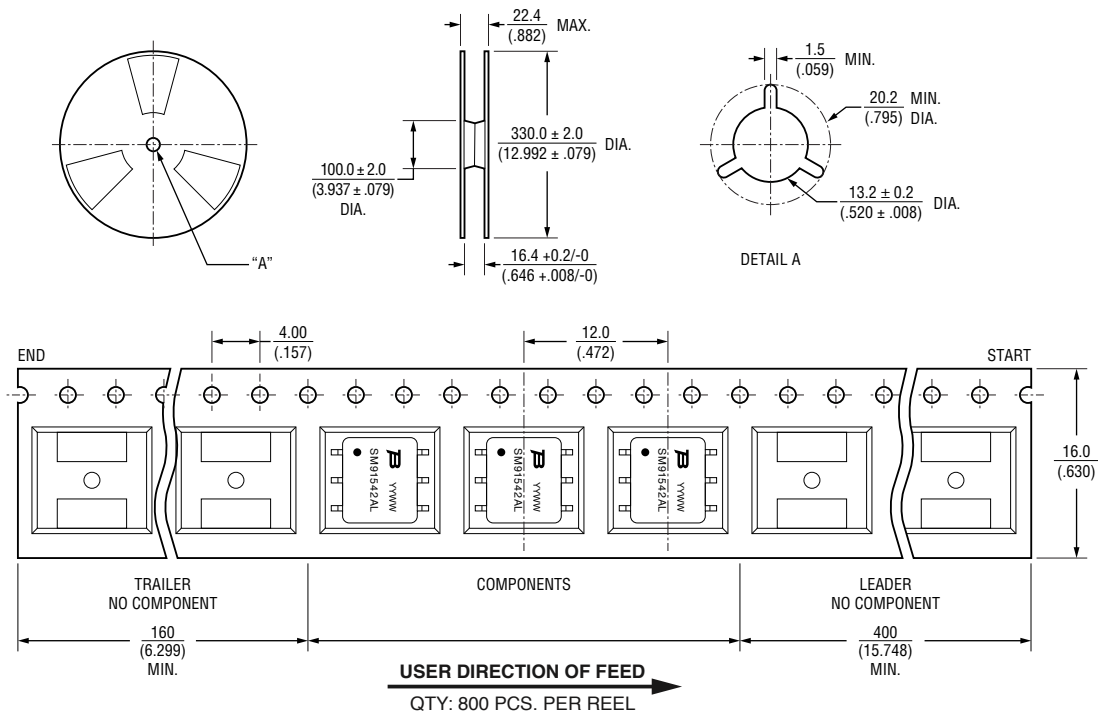
## Solder Profile



| Profile Feature                                                                                                     | Pb-Free Assembly                   |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Average Ramp-Up Rate                                                                                                | 3 °C / second max.                 |
| PREHEAT:<br>Temperature Min. ( $T_{smin}$ )<br>Temperature Max. ( $T_{smax}$ )<br>Time ( $T_{smin}$ to $T_{smax}$ ) | 150 °C<br>200 °C<br>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                             |

## Packaging Specifications

Specifications and tolerances comply with EIA-481 requirements.



REV. 06/23

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