

## Features

- Good performance and cost-effective
- Designed to meet IEEE 802.3u (100 Base-T)
- Expanded temperature range: -40 to +125 °C
- RoHS compliant\* and halogen free\*\*
- AEC-Q200 compliant

## SM91071AL - 10/100 Base-T Transformer

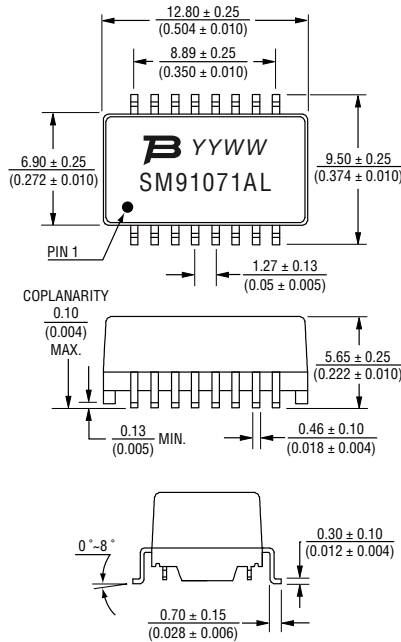
### Electrical Specifications @ 25 °C

|   |                               |
|---|-------------------------------|
| OCL (100 kHz, 0.1 V, 8 mA DC Bias)                                | 350 $\mu$ H Min.              |
| Leakage Inductance (100 kHz, 0.1 V)                               |                               |
| TD with TX Shorted  | 0.5 $\mu$ H Max.              |
| RD with RX Shorted  | 0.5 $\mu$ H Max.              |
| Turns Ratio   |                               |
| TD : TX   | 1 : 1 ( $\pm 2$ %)            |
| RD : RX   | 1 : 1 ( $\pm 2$ %)            |
| DCR   |                               |
| TD & RD   | 1.0 ohm Max.                  |
| TX & RX   | 1.4 ohm Max.                  |
| Insertion Loss (TD to TX & RD to RX)                              |                               |
| 1-100 MHz   | -1.1 dB Max.                  |
| Return Loss (TD to TX & RD to RX with 100 ohm load)               |                               |
| 1-40 MHz  | -16 dB Min.                   |
| 40-100 MHz  | -10+20*log (f/80 MHz) dB Min. |
| Cross Talk (Between Each Channel)                                 |                               |
| 1-60 MHz  | -40 dB Min.                   |
| 60-100 MHz  | -35 dB Min.                   |
| Common Mode Rejection (TD to TX & RD to RX)                       |                               |
| 1-60 MHz  | -37 dB Min.                   |
| 60-100 MHz  | -30 dB Min.                   |
| Differential to Common Mode Rejection Ratio (TD to TX & RD to RX) |                               |
| 30 MHz  | -35 dB Min.                   |
| 60 MHz  | -35 dB Min.                   |
| Hi-Pot (TD to TX & RD to RX @ 1 mA, 60 sec.)                      | 1500 Vrms & 2250 Vdc          |
| Storage Temperature   | -40 to +125 °C                |
| Operating Temperature   | -40 to +125 °C                |
| Moisture Sensitivity Level  | 1                             |
| ESD Classification (HBM)  | N/A                           |

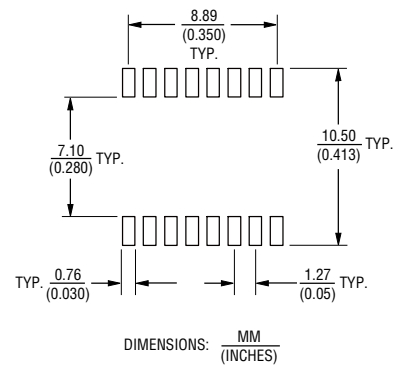
### Packaging Specifications

Tape & Reel ..... 600 pcs./reel

### Product Dimensions



### Recommended Layout



### How To Order

Model SM91071 A L - E

AEC-Q200 Compliant \_\_\_\_\_

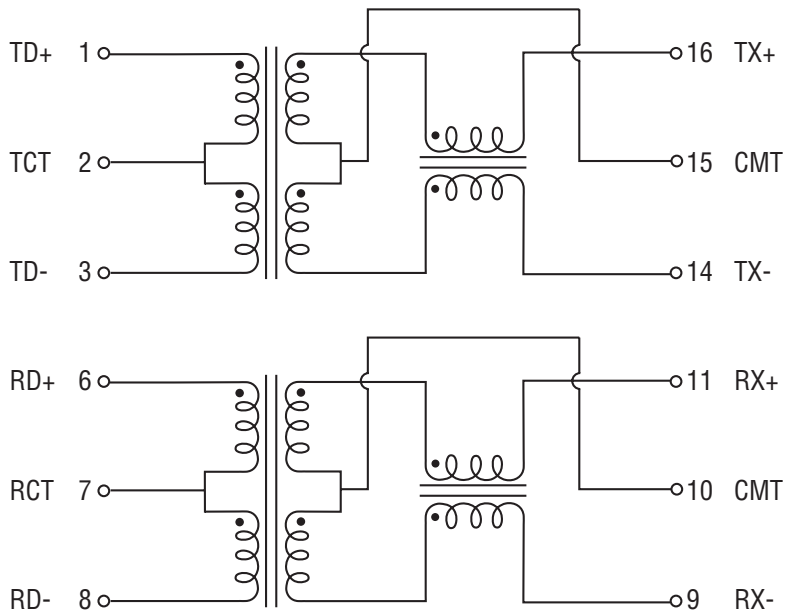
Termination \_\_\_\_\_

  L = Cu/Ni/Sn (RoHS Compliant)

Packaging \_\_\_\_\_

  E = Tape and Reel (600 pcs. per reel)

### Electrical Schematic



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

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

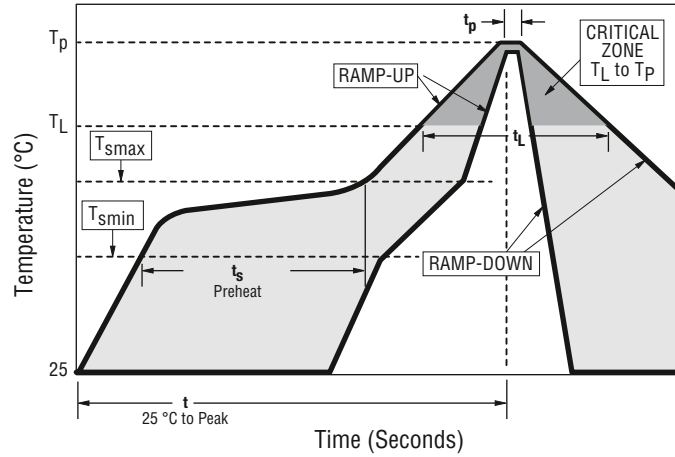
\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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Solder Profile



| Profile Features                                   | Pb Free Assembly |
|--|------------------|
| Average Ramp-up Rate                               | 3 °C/second max. |
| Preheat  |                  |
| Temperature min. ( $T_S$ min)                      | 150 °C           |
| Temperature max. ( $T_S$ max)                      | 200 °C           |
| Time ( $t_S$ min. to $t_S$ max.)                   | 60 ~ 180 s       |
| Liquidus Temperature: $T_L$                        | 217 °C           |
| Time above Liquidus Temperature: $t_L$             | 60 ~ 150 s       |
| Peak Temperature: $T_p$                            | 245-250 °C       |
| Time within 5 °C of Actual Peak Temperature: $t_p$ | 20 ~ 40 s        |
| Ramp-down Rate from Peak Temperature               | 6 °C/s max.      |
| Time 25 °C to Peak: $t_{TO\ PEAK}$                 | 8 minutes max.   |

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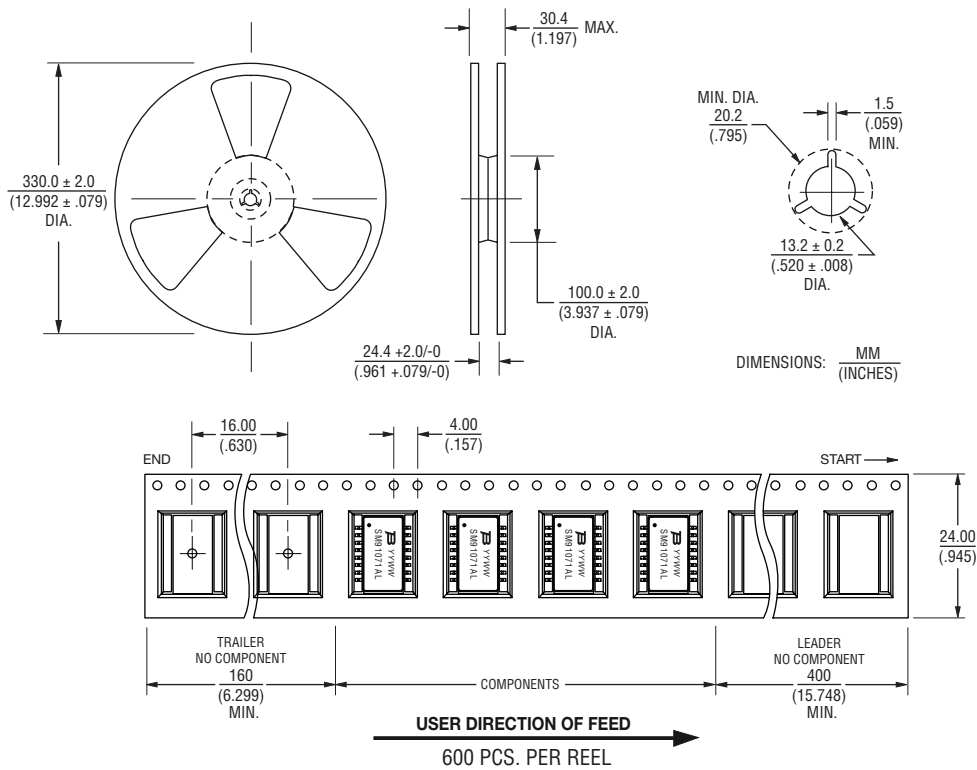
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# SM91071AL - 10/100 Base-T Transformer

**BOURNS®**

## Packaging Specifications

Specifications and tolerances comply with EIA-481 requirements.



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