

## Features

- Designed to meet IEEE 802.3u (100 Base-T)
- Expanded temperature range: -40 to +125 °C
- RoHS compliant\*
- AEC-Q200 compliant

## SM91074AL - 10/100 Base-T Transformer

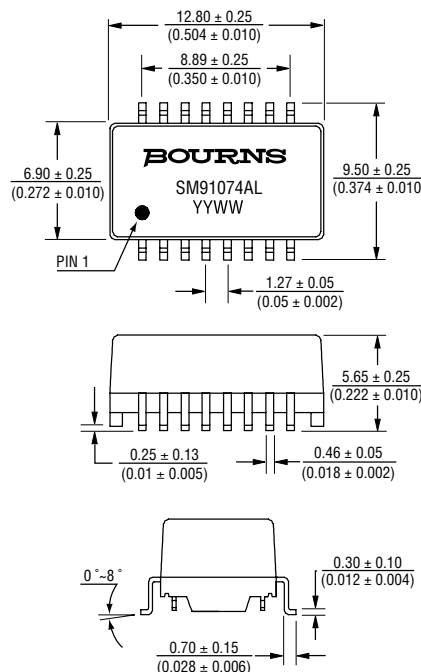
### Electrical Specifications @ 25 °C

Inductance (100 kHz, 0.1 V, 8 mADC)	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

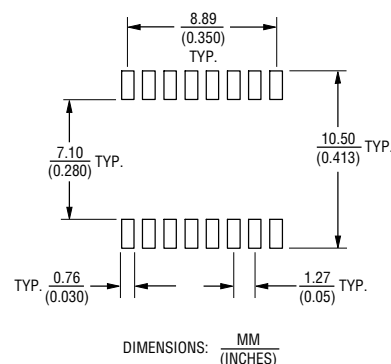
### Packaging Specifications

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

### Product Dimensions



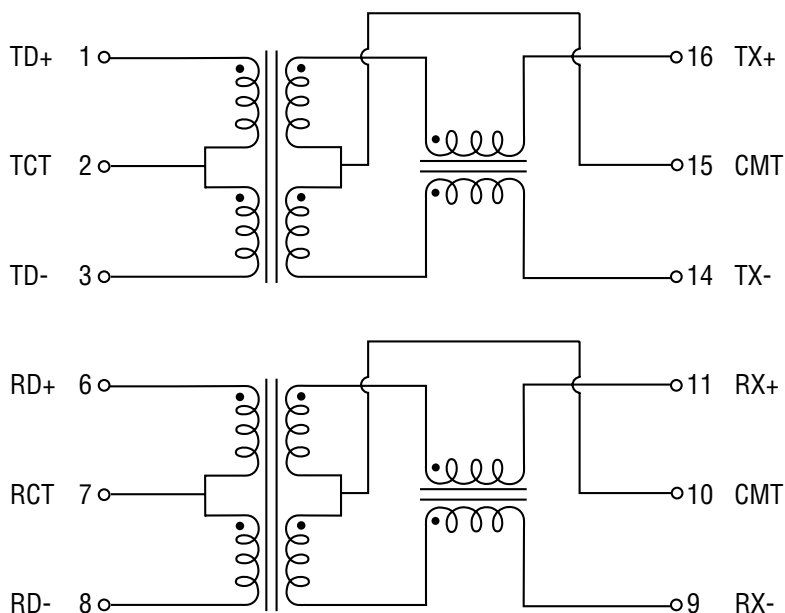
### Recommended Layout



### How To Order

Model **SM91074 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.  
 Specifications are subject to change without notice.

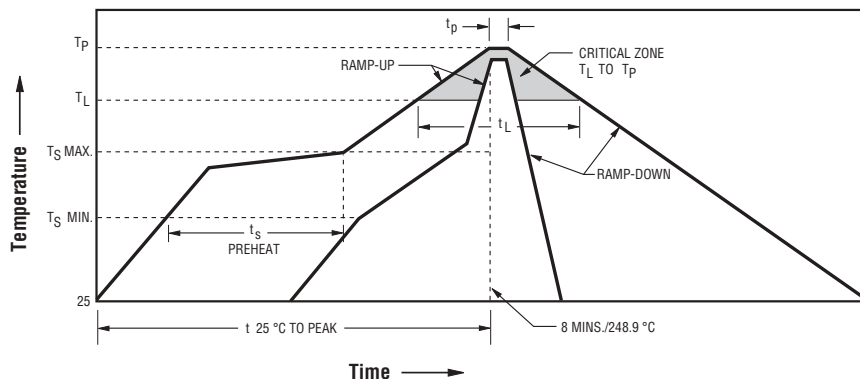
Users should verify actual device performance in their specific applications.

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# SM91074AL - 10/100 Base-T Transformer

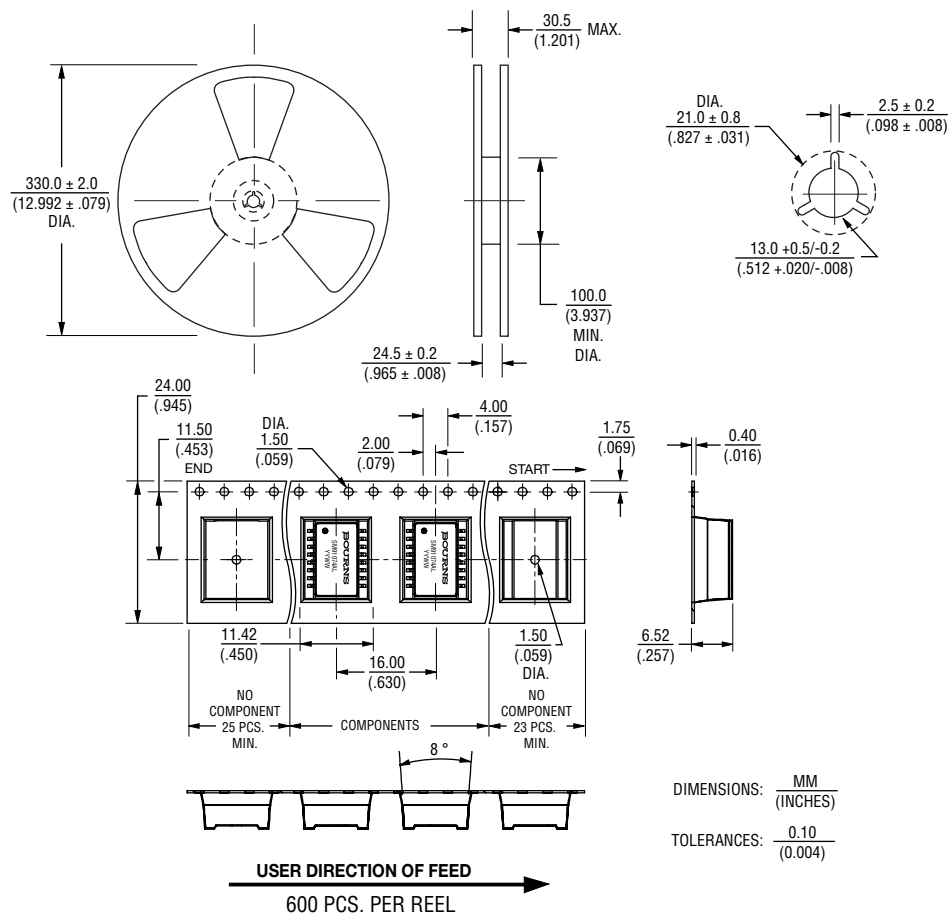
**BOURNS®**

## Solder Profile



Ramp-up rate = 3 °C/sec. max.  
 Ramp-down rate = 6 °C/sec. max.  
 $T_L = 217\text{ °C}$   $t_L = 60\text{-}150\text{ sec.}$   
 $T_P = 250\text{ °C} \pm 3\text{ °C}$   
 Time within 5 °C of actual Peak Temp ( $t_P$ ) = 20~40 sec.  
 $T_S\text{ min} = 150\text{ °C}$   $T_S\text{ max} = 200\text{ °C}$   
 $T_S\text{ min to }T_S\text{ max} = 60\text{-}180\text{ sec.}$   
 25 °C to Peak Temperature = 8 min. max.

## Packaging Specifications



REV. 05/19

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