

## Features

- Single port Gigabit Ethernet
- Working voltage: 800 V
- Hi-Pot: 4680 VDC
- Design construction: Reinforced insulation per IEC 60664-1 and IEC 62368-1 requirements
- Creepage distance > 8 mm, pollution degree 2, material group CTI I
- Clearance distance > 8 mm, overvoltage category II
- RoHS compliant\*

## SM91604L LAN Transformer

### Additional Information

Click these links for more information:



### Electrical Specifications @ 25 °C

OCL (100 kHz / 0.1 V, 8 mA DC Bias)  
(-40 °C to +105 °C)..... 350  $\mu$ H min.  
Leakage Inductance (100 kHz/0.1 V)  
..... 0.35  $\mu$ H max.

#### DCR

Transformer Side ..... 0.90  $\Omega$  max.  
CM Choke Side ..... 1.30  $\Omega$  max.  
Turns Ratio ..... 1 : 1  $\pm$  2 %  
Insertion Loss

1~60 MHz..... -1.0 dB max.  
60~100 MHz..... -1.5 dB max.  
100~125 MHz..... -2.0 dB max.

#### Return Loss (Z out = 100 $\Omega$ )

1~30 MHz..... -13.0 dB min.  
30~45 MHz..... -10.0 dB min.  
45~60 MHz..... -8.0 dB min.  
60~80 MHz..... -6.0 dB min.  
80~100 MHz..... -5.0 dB min.  
100~125 MHz..... -4.0 dB min.

#### Common Mode Rejection

1~100 MHz..... -25.0 dB min.

#### Cross Talk (Between each channel):

1 MHz..... -58 dB min.  
5~100 MHz..... -30+20\*LOG<sub>10</sub>  
(f/20 MHz) dB min.

Hi-POT (1 mA, 60 S) ..... 4680 VDC

Working Voltage ..... up to 800 V

#### Operating Temperature

..... -40 °C to +125 °C

#### Storage Temperature (Component)

..... -25 °C to +85 °C

Moisture Sensitivity Level ..... 1

ESD Classification (HBM)..... N/A

### Packaging Specification

Tape & Reel..... 200 pcs. per 13-inch reel

### How To Order

SM91604 L - E

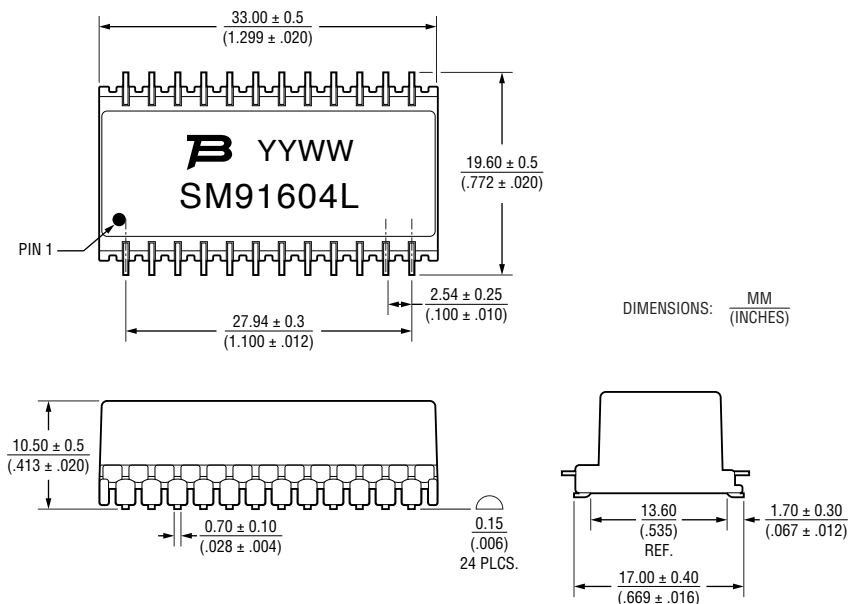
Model \_\_\_\_\_

RoHS Compliancy Designator \_\_\_\_\_

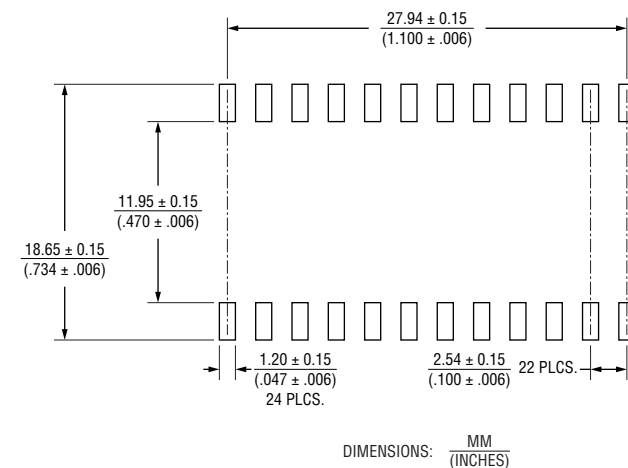
Packaging \_\_\_\_\_

E = 200 pcs. per 13-inch Reel

### Product Dimensions



### Recommended Layout



**CALIFORNIA WARNING:** Can expose you to lead, a carcinogen and reproductive toxicant. See [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.

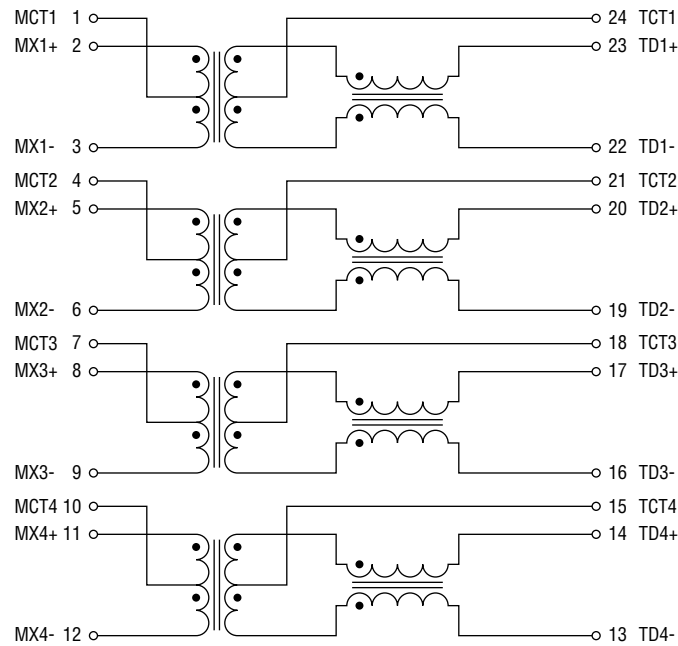
Users should verify actual device performance in their specific applications.

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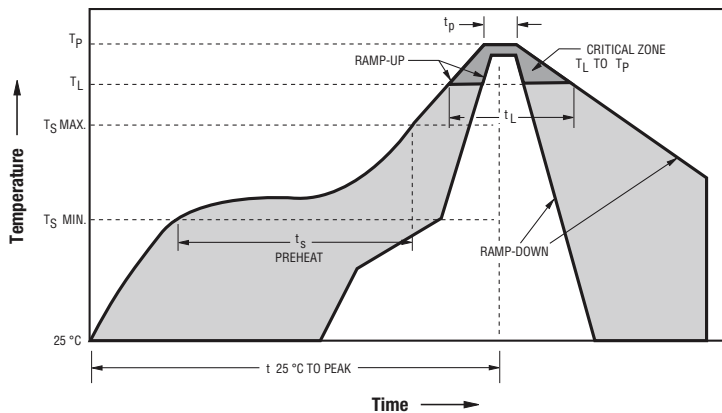
# SM91604L LAN Transformer

**BOURNS®**

## Electrical Schematic



## 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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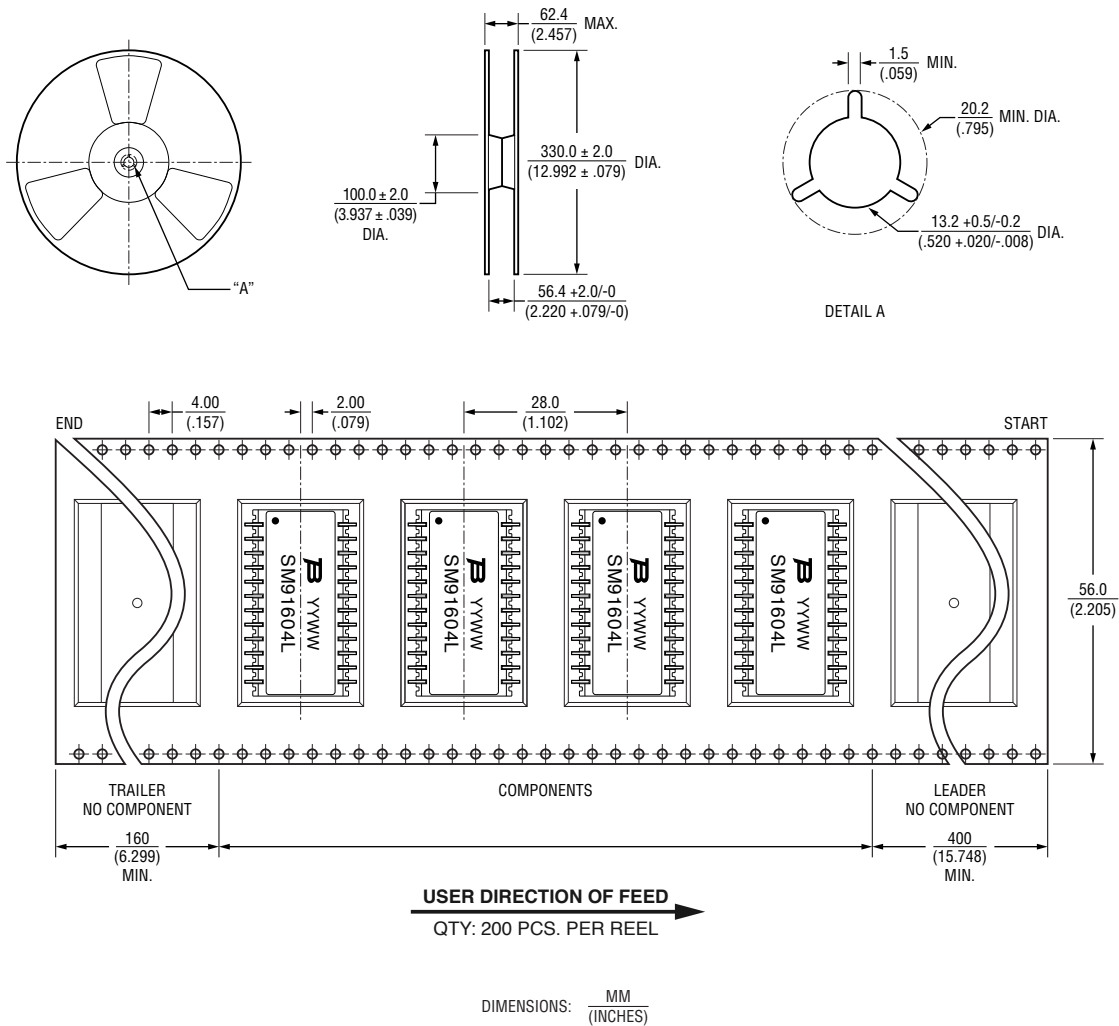
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## Packaging Specifications

Specifications and tolerances comply with EIA-481 requirements.



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