



## 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 µH min.
Leakage Inductance (100 kHz/0.1 V)	0.35 µH max.
DCR	
Transformer Side	0.90 Ω max.
CM Choke Side	1.30 Ω max.
Turns Ratio	1 : 1 ± 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 Ω)	
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 +105 °C
Storage Temperature (Component)	-50 °C to +125 °C
Moisture Sensitivity Level	1
ESD Classification (HBM)	N/A

### Packaging Specification

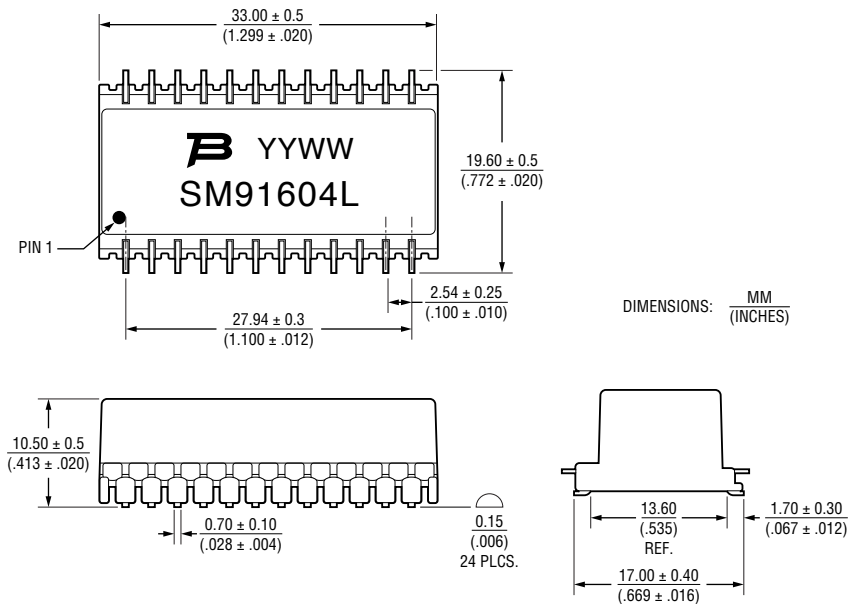
Tape & Reel..... 200 pcs. per 13-inch reel

### How To Order

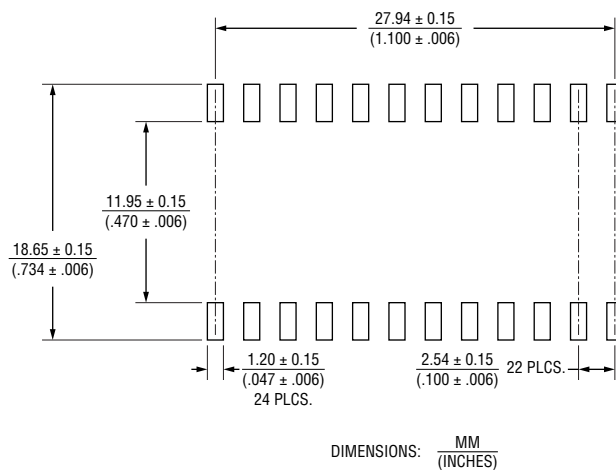
SM91604 L - E

Model \_\_\_\_\_  
RoHS Compliancy Designator \_\_\_\_\_  
Packaging \_\_\_\_\_  
E = 200 pcs. per 13-inch Reel

### Product Dimensions



### Recommended Layout



**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.

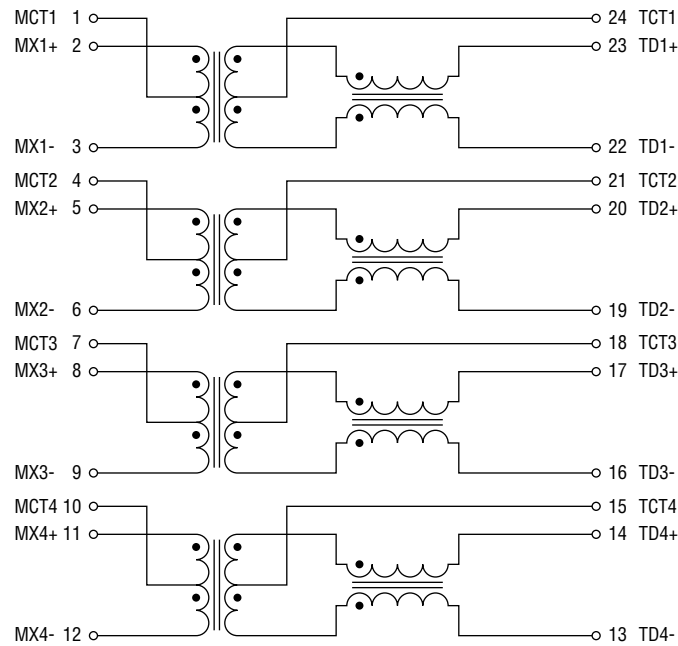
Users should verify actual device performance in their specific applications.

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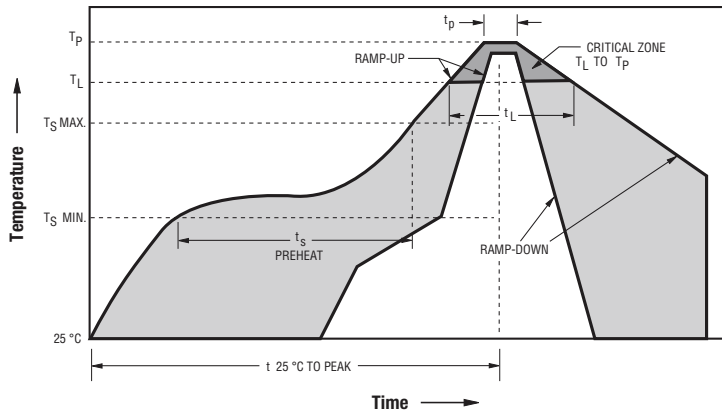
# SM91604L LAN Transformer

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## 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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