

## Features

- 100Base-Tx Ethernet
- Working voltage up to 1500 VDC
- Hi-Pot: 4000 VAC
- Design construction: Basic insulation per IEC 62368-1
- Creepage distance 8 mm minimum, pollution degree 2, material group CTI I
- Clearance distance 8 mm minimum, Overvoltage Category III, up to 4 km sea level
- RoHS compliant\*

## SM91078L LAN Transformer

### Additional Information

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### General Specifications

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

DCR  
Transformer Side ..... 0.6  $\Omega$  max.  
CM Choke Side ..... 1.0  $\Omega$  max.

Turns Ratio ..... 1 : 1  $\pm$  2 %

Insertion Loss:  
1-10 MHz..... -0.35 dB max.  
10~60 MHz..... -2.5 dB max.  
60~100 MHz..... -4.0 dB max.

Return Loss (Z out = 100  $\Omega$ )  
1~30 MHz:..... -8.5 dB min.  
30~45 MHz:..... -6.0 dB min.  
45~60 MHz:..... -4.5 dB min.

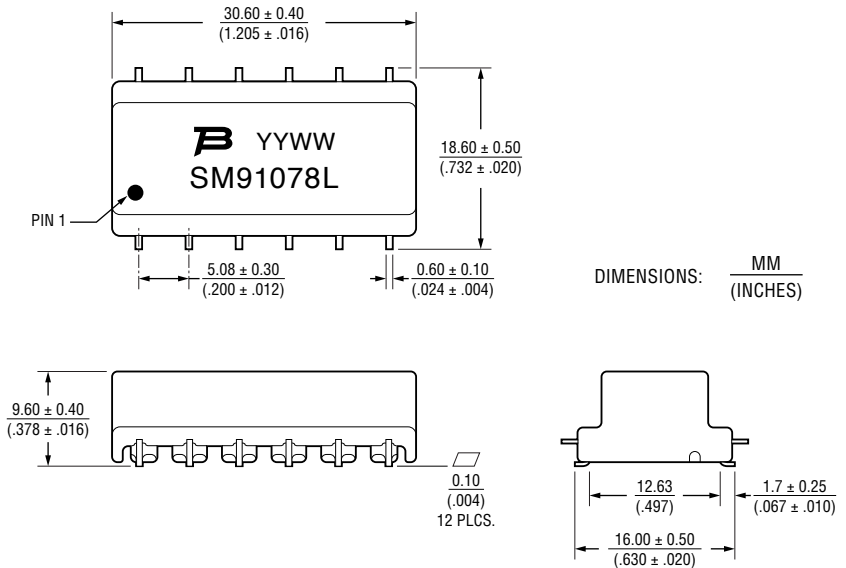
Common Mode Rejection Ratio  
1~30 MHz..... -45 dB min.  
30~100 MHz..... -30 dB min.

Cross Talk (Between each Channel):  
1 MHz:..... -62 dB min.  
5~100 MHz:..... -40+20\*LOG<sub>10</sub>  
(f/30 MHz) dB min.

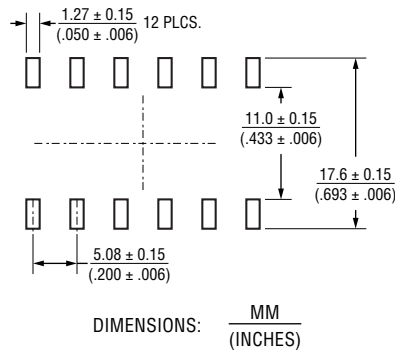
Hi-pot (1 mA, 60 S)..... 4000 VAC  
Working Voltage ..... up to 1500 VDC  
System Voltage..... up to 600 VAC  
Impulse Voltage ..... 8 kV, 1.2/5.0  $\mu$ S

Operation Temperature  
..... -40 °C to +105 °C  
Storage Temperature (Component)  
..... -25 °C to +85 °C  
Moisture Sensitivity Level ..... 1  
ESD Classification (HBM)..... N/A

### Product Dimensions



### Recommended Layout

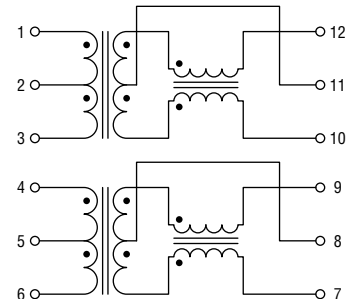


### How To Order

**SM91078 L - E**

Model \_\_\_\_\_  
 Termination \_\_\_\_\_  
 L = Tin (RoHS Compliant)  
 Packaging \_\_\_\_\_  
 E = Tape and Reel

### Electric Schematic



### Packaging Specification

Tape & Reel ..... 200 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.  
 Specifications are subject to change without notice.

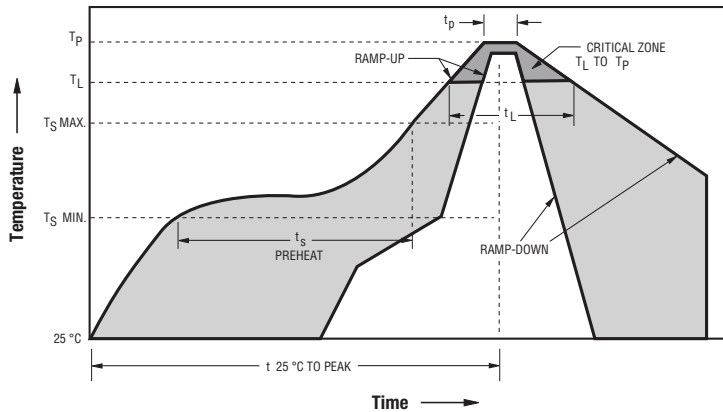
Users should verify actual device performance in their specific applications.

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# SM91078L LAN Transformer

**BOURNS®**

## 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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