

## Features

- Compliant with IEEE802.3 standards
- Designed for 10/100/1000 Base-T and PoE+
- 5K VAC dielectric withstanding voltage
- RoHS compliant\*

## Applications

- LAN
- Ethernet
- Power over Ethernet - PoE

## SM51589PEL LAN 10/100/1000 Base-T Transformer (PoE+) Modules

### Electrical Specifications @ 25 °C

Turns Ratio ( $\pm 5\%$ )	.....1CT:1CT
OCL (@100 kHz, 0.1 V, 8 mA, DC Bias)	..... 350 $\mu$ H min.
Leakage Inductance (@100 kHz, 0.1 V)	..... 0.5 $\mu$ H max.
Interwinding Capacitance @ 100 kHz, 0.1 V	..... 35 pF max.
Isolation Hi-Pot	..... 5000 VAC, 1 mA, 2 seconds
Insertion Loss 1-100 MHz	.....-1.0 dB max.
Return Loss (@ 100 Ohms) 1-30 MHz	.....-18 dB min.
40 MHz	.....-14.4 dB min.
50 MHz	.....-13.1 dB min.
60-80 MHz	.....-12 dB min.
100 MHz	.....-10 dB min.
Cross Talk 30 MHz	.....-45 dB min.
60 MHz	.....-40 dB min.
80 MHz	.....-35 dB min.
DCMR 30 MHz	.....-43 dB min.
60 MHz	.....-37 dB min.
80 MHz	.....-33 dB min.
PoE+ Current	.....Up to 720 mADC
Operating Temperature Range	.....-40 °C to +85 °C
Storage Temperature Range	.....-40 °C to +125 °C
Moisture Sensitivity Level	.....1
ESD Classification (HBM)	..... N/A

### Environmental Specifications

Moisture Sensitivity Level	..... 1
ESD Classification (HBM)	..... N/A

### Packaging Specifications

Tape & Reel..... 400 pcs./reel

### How To Order

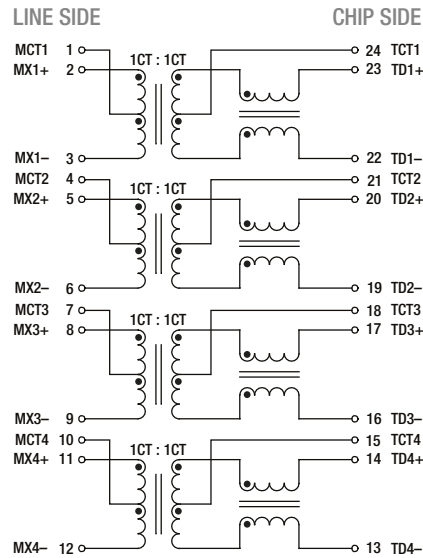
Model SM51589 P E L

Construction \_\_\_\_\_  
P = Potted

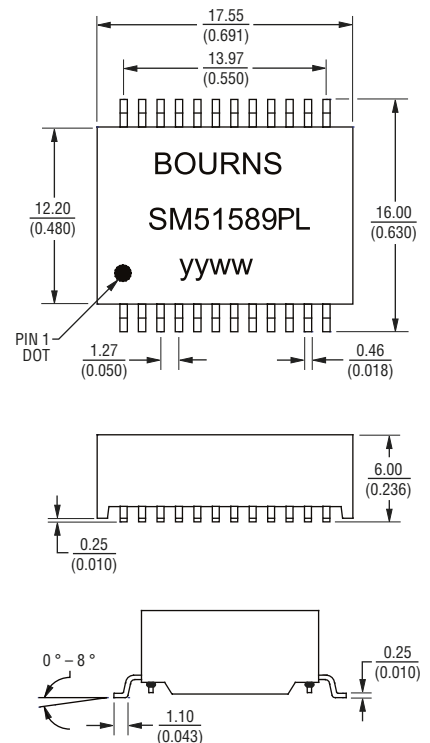
Packaging \_\_\_\_\_  
E = Tape and Reel (400 pcs./reel)

Termination \_\_\_\_\_  
L = Tin (RoHS Compliant)

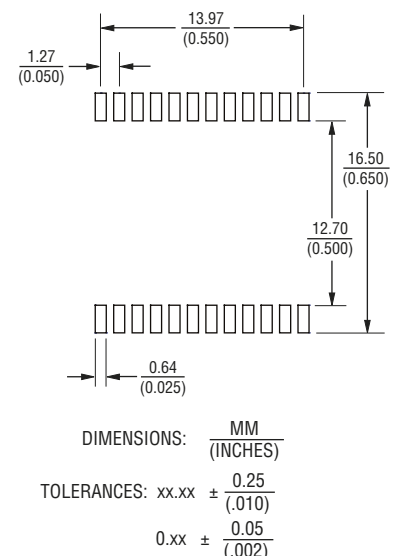
### Electrical Schematic



### Product Dimensions



### Recommended Layout



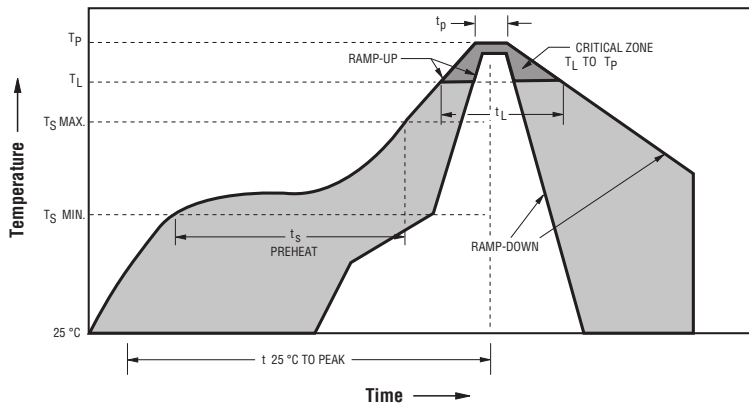
**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at [www.bourns.com/docs/legal/disclaimer.pdf](http://www.bourns.com/docs/legal/disclaimer.pdf).

# SM51589PEL LAN 10/100/1000 Base-T Transformer (PoE+) Modules

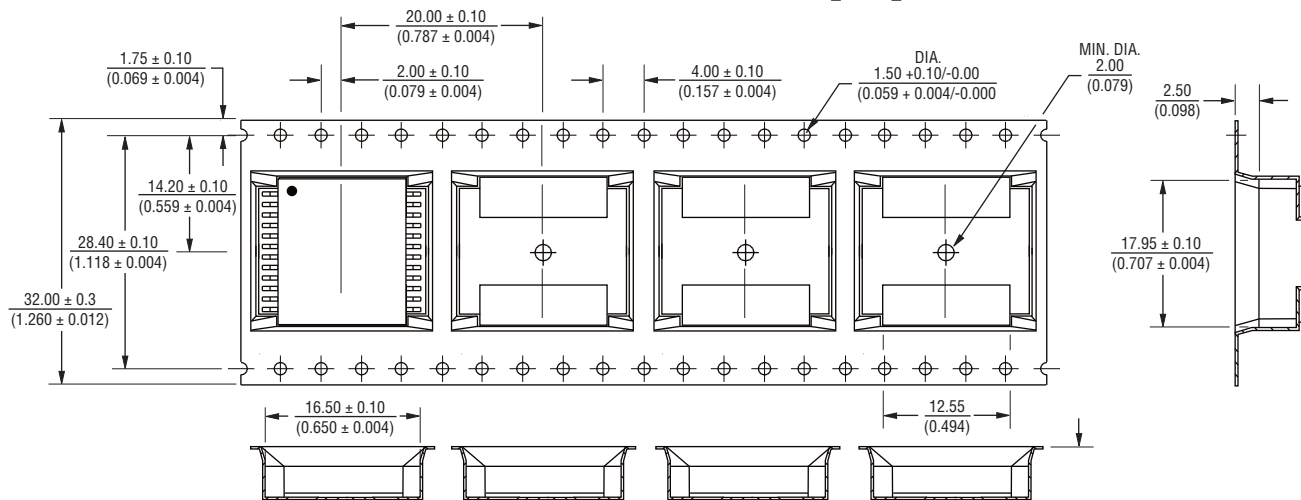
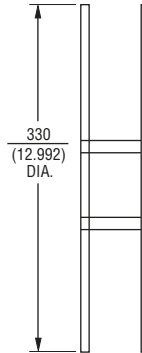
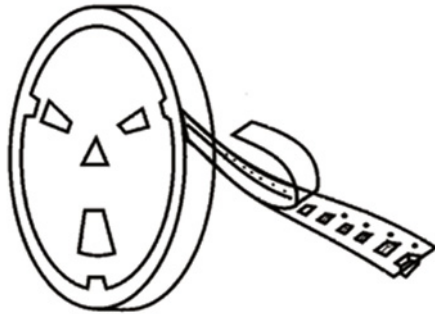


## Solder Profile



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



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

USER DIRECTION OF FEED

QUANTITY: 400 PCS. PER REEL

REV. 05/18

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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