

## Features

- IEEE 802.3 Ethernet compatible
- Fully integrated for adapter, hub and motherboard applications
- Expanded temperature range: -40 to +125 °C
- RoHS compliant\*

## Applications

- LAN
- Ethernet

# SM13072APL - 10/100 Base-T Transformer

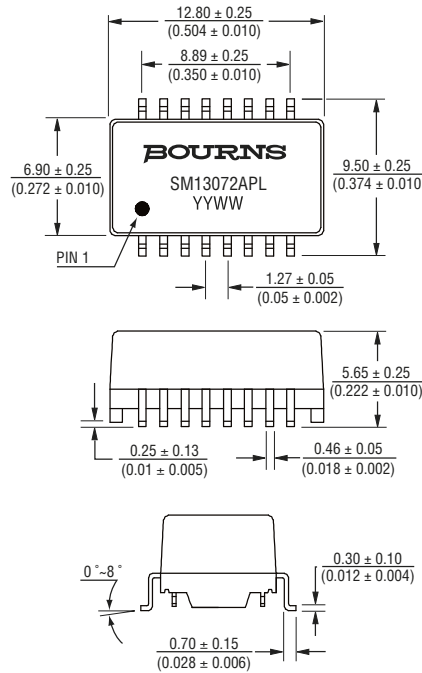
### Electrical Specifications @ 25 °C

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.  
 Cww (TD to TX & RD to RX @ 100 kHz, 0.1 V) ..... 35 pF Max.  
 Turns Ratio  
 TD : TX ..... 1 : 1 ( $\pm 2$  %)  
 RD : RX ..... 1 : 1 ( $\pm 2$  %)  
 DCR  
 TD & RD ..... 1.4 ohm Max.  
 TX & RX ..... 1.0 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

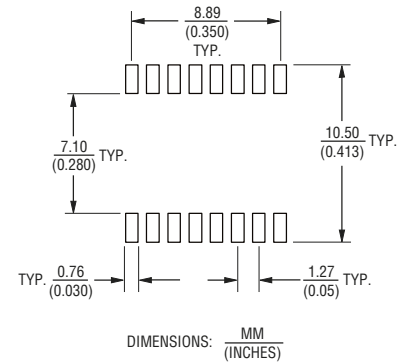
### Packaging Specifications

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

### Product Dimensions



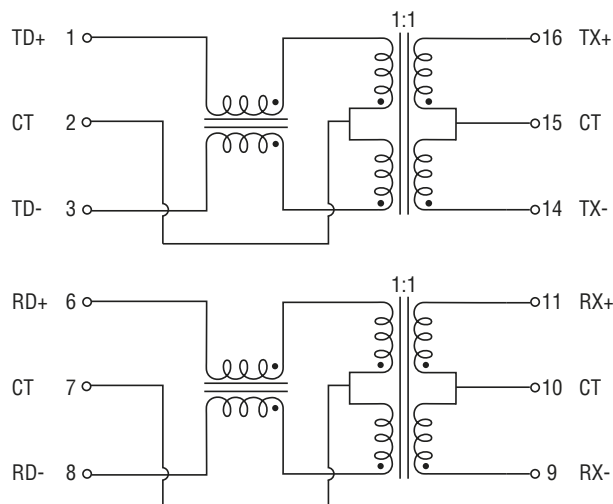
### Recommended Layout



### How To Order

Model **SM13072A P E L**  
 Construction \_\_\_\_\_  
 P = Potted  
 Packaging \_\_\_\_\_  
 E = Tape and Reel (600 pcs./reel)  
 Termination \_\_\_\_\_  
 L = Cu/Ni/Sn (RoHS Compliant)

### Electrical Schematic



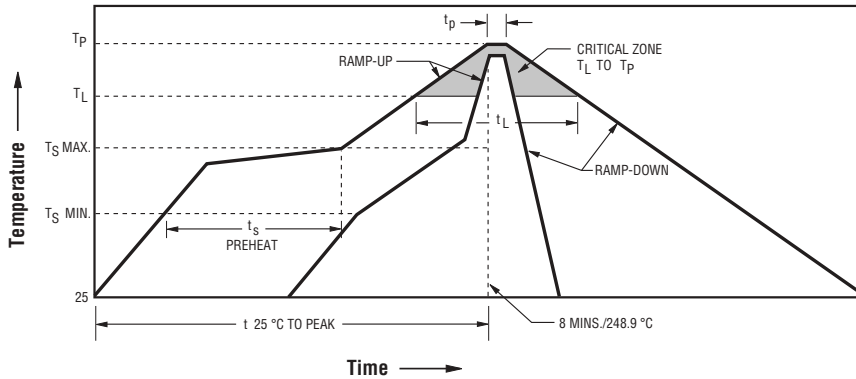
**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.  
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# SM13072APEL - 10/100 Base-T Transformer

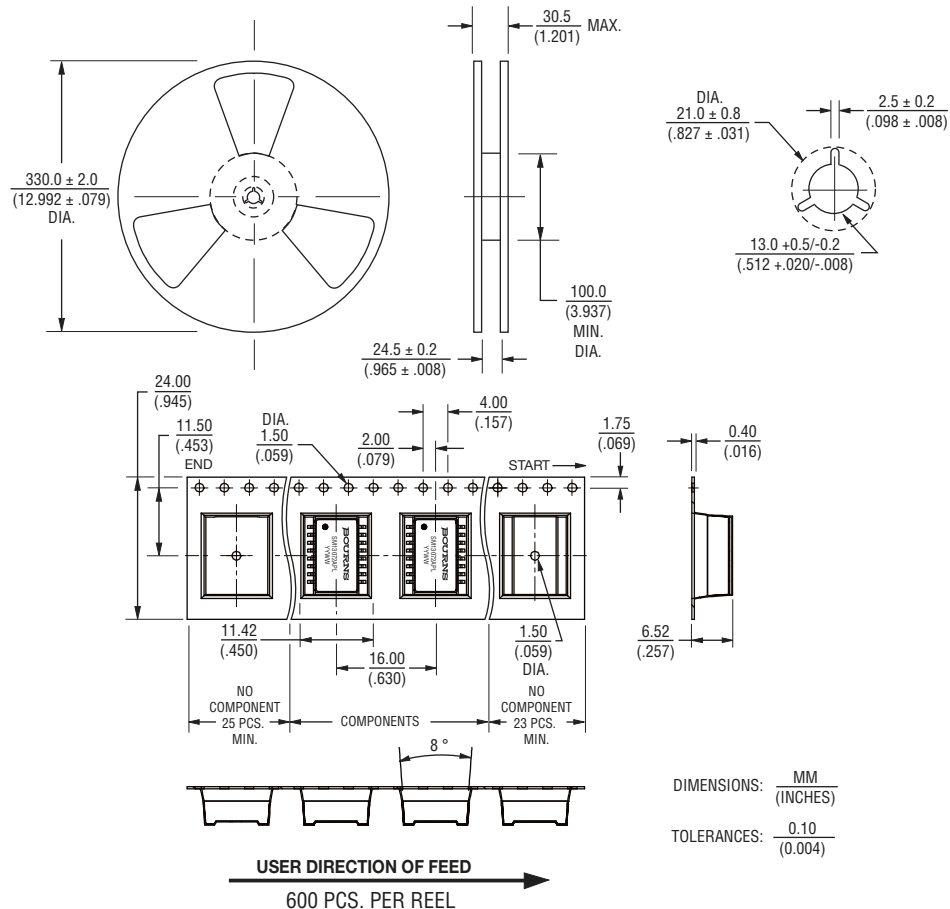
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## Solder Profile



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:  $\frac{\text{MM}}{\text{(INCHES)}}$   
 TOLERANCES:  $\frac{0.10}{(0.004)}$

03/18

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