



## Features

- IEEE 802.3 Ethernet compatible
- Compatible with 1G/2.5G/5G Base-T
- PoE+ capable
- Discrete transformers and common mode chip inductors for flexible PCB layout
- Pairing common mode chip inductor SRF2012A-801Y for EMI reduction
- Expanded temperature range: -40 to +85 °C
- RoHS compliant\* and halogen free\*\*

## SM453230-231N7YP - 1 / 2.5 / 5 GbE Chip-LAN Transformer

### Electrical Specifications @ 25 °C

Inductance (Pin 1-2 & 6-7 / short 3-4)  
 ....230  $\mu$ H min. @ 100 kHz, 0.1 V, 0 mA  
 ....200  $\mu$ H min. @ 100 kHz, 0.1 V, 15 mA  
 Turns Ratio  
 Pin 1-2 : 6-7 / short 3-4 : 1:1 ..... $\pm$  3 %  
 Insertion Loss  
 1-250 MHz.....-1.5 dB typ.  
 .....-2.3 dB max.  
 Capacitance (Pin 3-5 / short 3-4)  
 .....35 pF typ.  
 PoE+.....700 mA  
 Hi-Pot (Pin 1-6, short 3-4)  
 .....1500 Vac, 60 s  
 Operating Temperature.-40 °C to +85 °C  
 Storage Temperature....-40 °C to +85 °C

### Packaging Specifications

Tape & Reel.....2000 pcs./reel

### How To Order

#### SM453230 - 231 - N7 Y P

Model \_\_\_\_\_  
 Packaging \_\_\_\_\_  
 121 = Inductance code  
 Termination \_\_\_\_\_  
 N7 = Termination code  
 Tolerance \_\_\_\_\_  
 Y = Tolerance code  
 Interface \_\_\_\_\_  
 P = PoE

### Additional Information

Click these links for more information:



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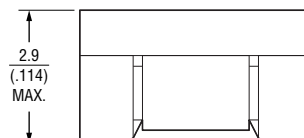
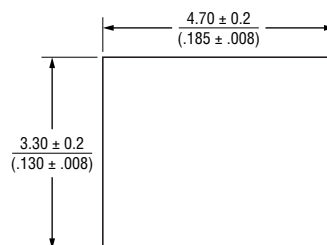
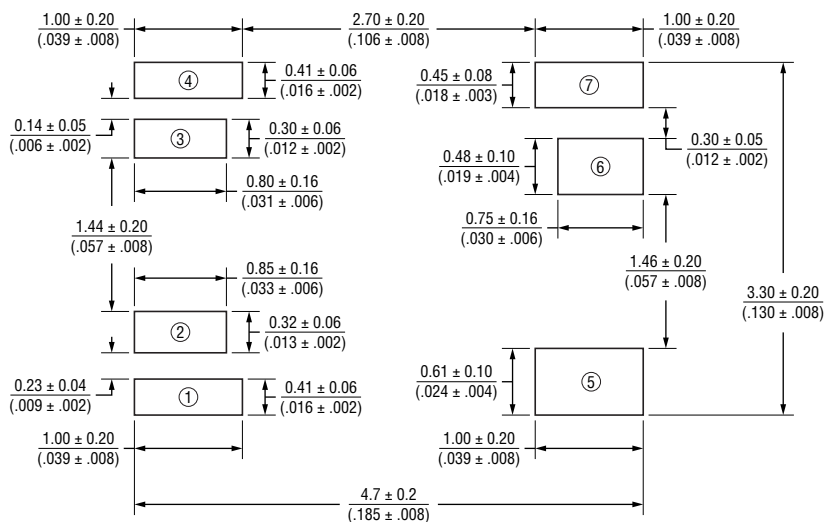
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### Product Dimensions

#### Terminal Dimensions – Top View



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

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

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

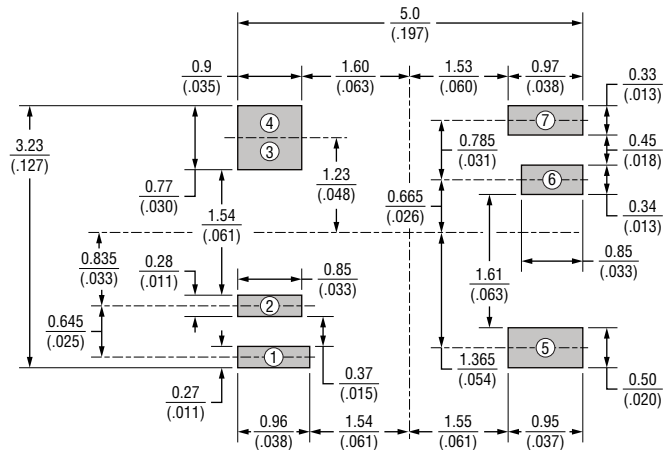
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# SM453230-231N7YP - 1 / 2.5 / 5 GbE Chip-LAN Transformer

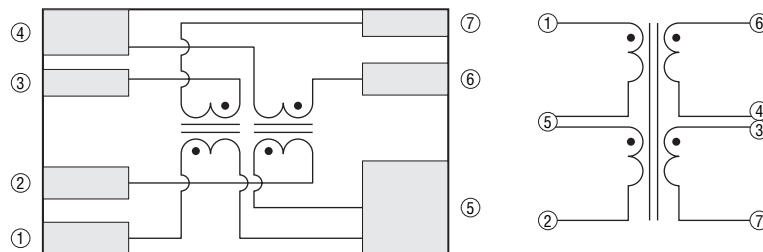
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## Recommended Layout

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

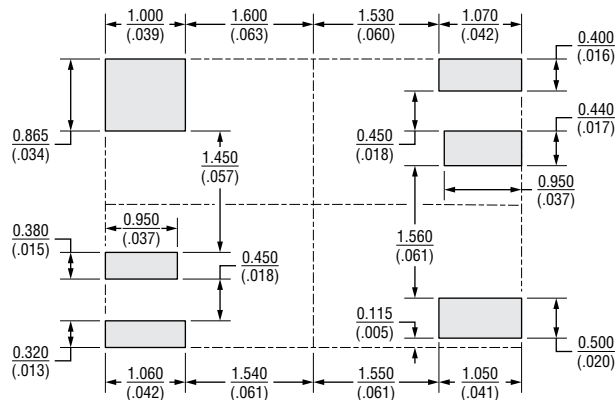


## Electrical Schematic



## Solder Paste Stencil Aperture Recommendation

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

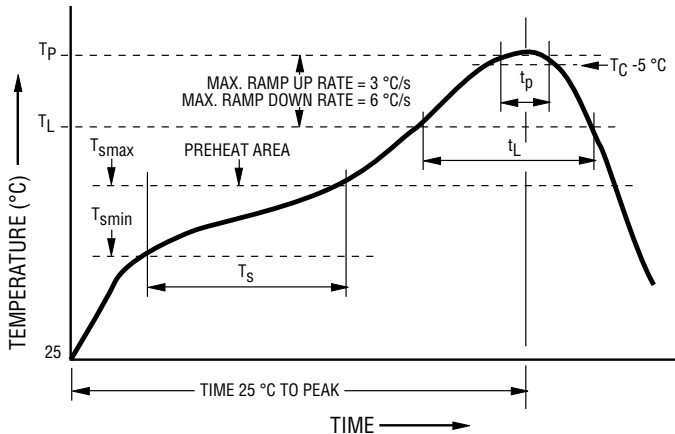


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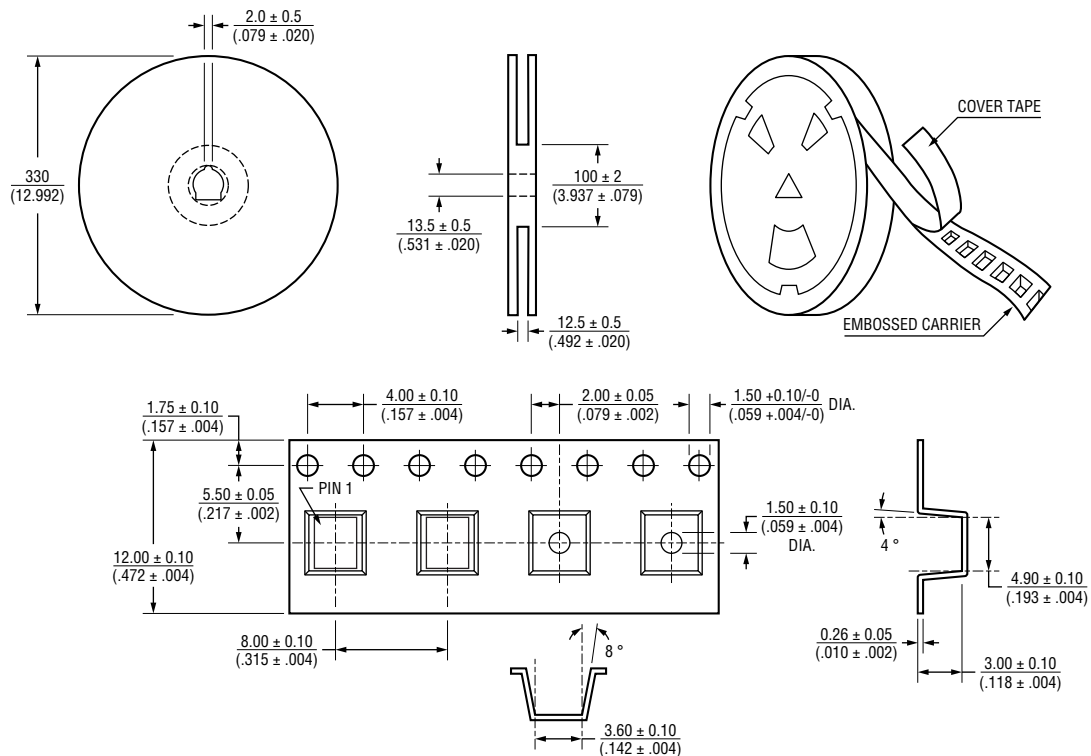
## Solder Reflow Recommendations



Profile Feature	Pb-Free Assembly
Preheat / Soak:	
Temperature Min. ( $T_{sm}$ )	150 °C
Temperature Max. ( $T_{smax}$ )	200 °C
Time ( $t_s$ ) from ( $T_{sm}$ to $T_{smax}$ )	60~120 seconds
Ramp Up Rate ( $T_L$ to $T_P$ )	3 °C / second max.
Liquidous Temperature ( $T_L$ )	217 °C
Time ( $t_L$ ) maintained above $T_L$	60~150 seconds
Peak Package Body Temperature ( $T_P$ )	250 °C
Time ( $t_p$ )* within 5 °C of the specified classification temperature ( $T_C$ )	30 seconds*
Ramp Down Rate ( $T_P$ to $T_L$ )	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

\*Tolerance for peak profile temperature ( $T_P$ ) is defined as a supplier minimum and a user maximum.

## Packaging Specifications



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

USER DIRECTION OF FEED

QTY: 2000 PCS. PER REEL

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