



## 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

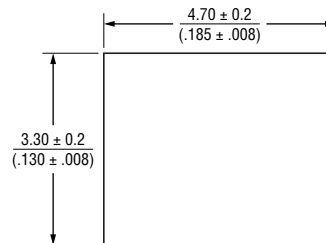
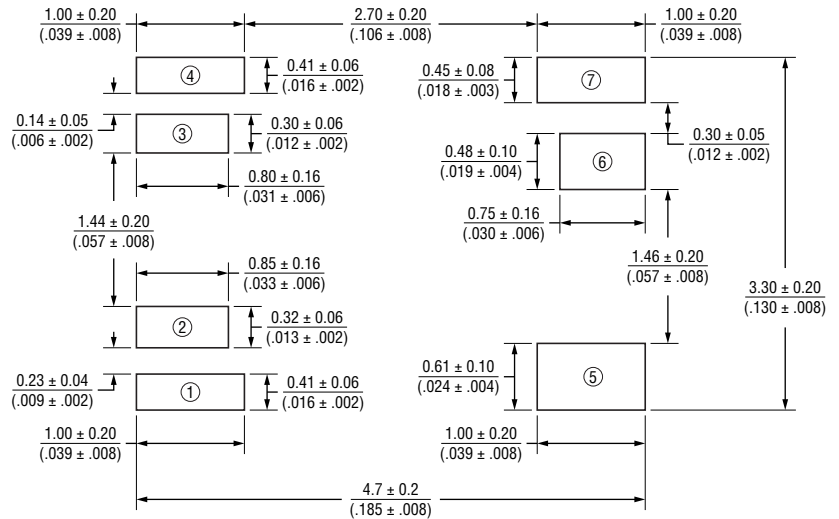
### Additional Information

Click these links for more information:

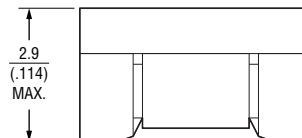


### Product Dimensions

#### Terminal Dimensions – Top View



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



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**WARNING**  
**Cancer and Reproductive Harm**  
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\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

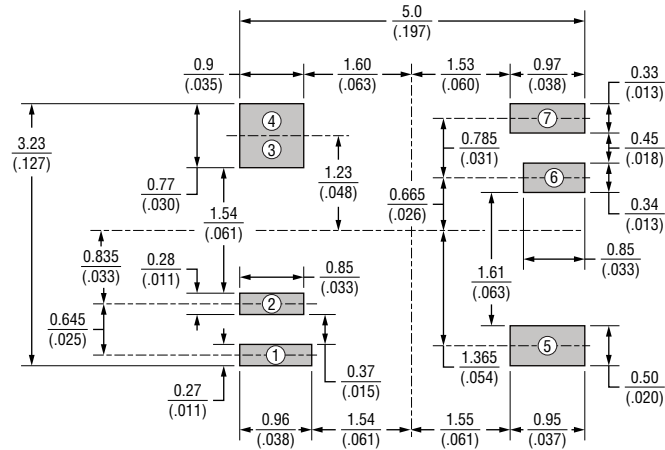
\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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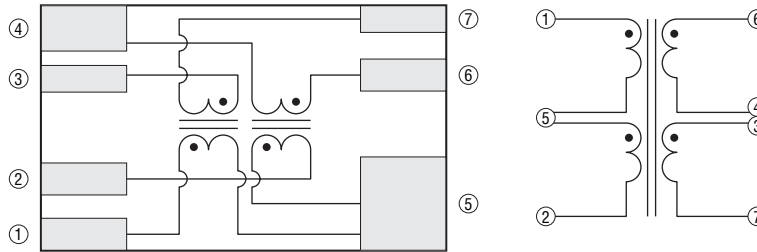
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## Recommended Layout

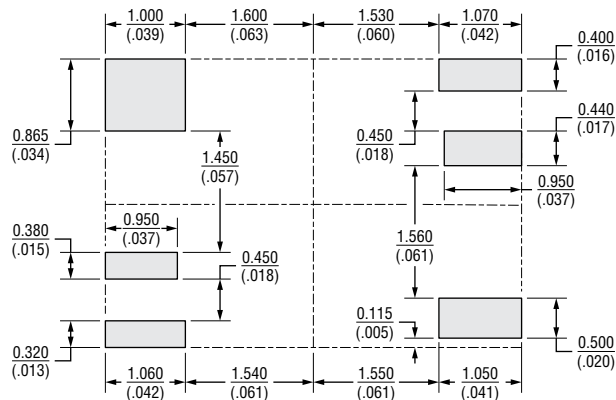


DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Electrical Schematic



## Solder Paste Stencil Aperture Recommendation



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

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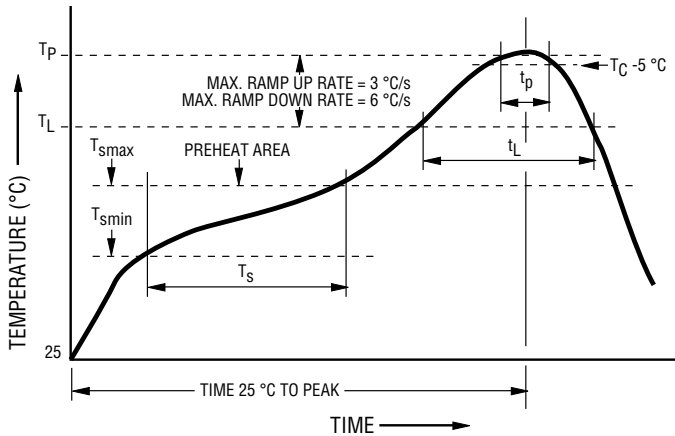
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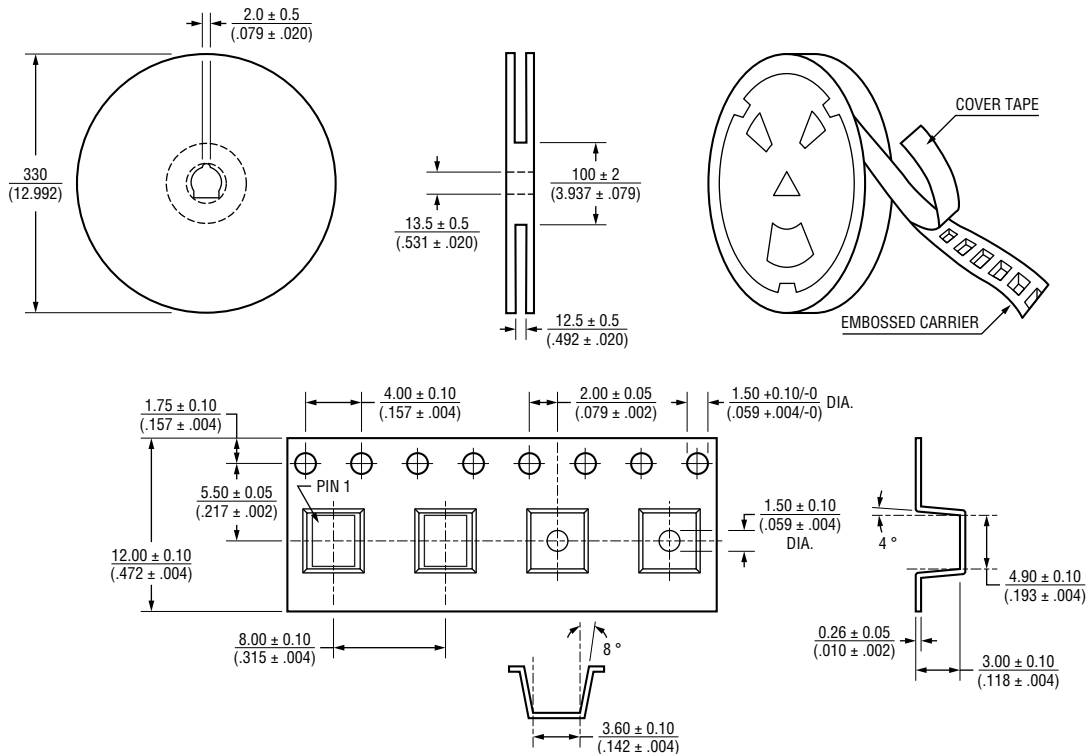
## Solder Reflow Recommendations



Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. ( $T_{smmin}$ ) Temperature Max. ( $T_{smmax}$ ) Time ( $t_s$ ) from ( $T_{smmin}$ to $T_{smmax}$ )	150 °C 200 °C 60~120 seconds
Ramp Up Rate ( $T_L$ to $T_p$ )	3 °C / second max.
Liquidous Temperature ( $T_L$ ) Time ( $t_L$ ) maintained above $T_L$	217 °C 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

11/21

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