

# SMT Current Sense Transformer

PA1005QNL Series



-  **Height:** 5.5mm Max
-  **Footprint:** 8.4mm x 7.2mm Max
-  **Current Rating:** up to 20A
-  **Frequency Range:** 50kHz to 1MHz

## Electrical Specifications @ 25°C — Operating Temperature -40°C to +125°C

Part <sup>5,6</sup> Number	Turns Ratio	Current <sup>2</sup> Rating (A)	Secondary Inductance (mH MIN)	DCR (mΩ Max)		Hipot (V <sub>RMS</sub> )
				Primary (8-7)	Secondary (1-3)	
PA1005.020QNL	1:20	20	0.08	0.75	550	900
PA1005.030QNL	1:30	20	0.18	0.75	870	900
PA1005.040QNL	1:40	20	0.32	0.75	1140	900
PA1005.050QNL	1:50	20	0.50	0.75	1500	900
PA1005.060QNL	1:60	20	0.72	0.75	2250	900
PA1005.070QNL	1:70	20	0.98	0.75	4750	900
PA1005.100QNL	1:100	20	2.00	0.75	5500	900
PA1005.125QNL	1:125	20	3.00	0.75	6500	900

### NOTES:

- The temperature of component (ambient temperature plus temperature rise) must be within the specified operating temperature range.
- The maximum current rating is based upon temperature rise of the component and represents the DC current which will cause a typical temperature rise of 40°C with no airflow when both one turn windings connected in parallel.
- To calculate value of terminating resistor (R<sub>t</sub>) use the following formula:  

$$R_t (W) = V_{REF} * N / (I_{peak\_primary})$$
- The peak flux density of the device must remain below 2000 Gauss. To calculate the peak flux density for uni-polar current use following formula:  

$$B_{pk} = 37.59 * V_{REF} * (Duty\_Cycle\_Max) * 10^5 / (N * Freq\_kHz)$$

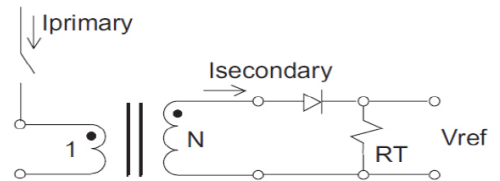
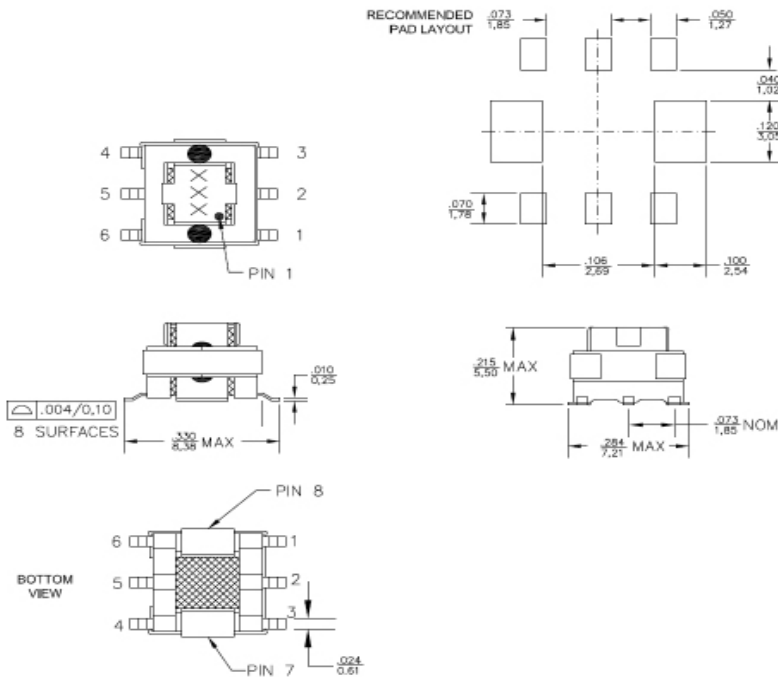
\* for bi-polar current applications divide B<sub>pk</sub> (as calculated above) by 2.
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA1005.020QNL becomes PA1005.020QNLT). Pulse complies to industry standard tape and reel specification EIA481.
- The "NL" suffix indicates an RoHS-compliant part number.

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## Mechanical

## Schematic



### APPLICATION CIRCUIT

Weight ..... 0.34 grams  
 Tray ..... 120/tray  
 Tape & Reel ..... 900/reel  
 Coplanarity ..... 0.004 inches

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0.25}$

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