

# SMT Current Sense Transformer

PH9505.XXXNL EP10 SMD Platform



- Insulation:** Reinforced, 6.5mm creepage
- Isolation:** 3000Vrms
- Height:** 14.4mm Max
- Footprint:** 13.6mm x 12.8mm Max
- Current Rating:** up to 30A
- Operating Frequency:** Greater than 20kHz

## Electrical Specifications @ 25°C — Operating Temperature -40°C to +150°C

| Part #<br>Number | Turns Ratio<br>±2.0% | Current <sup>2</sup><br>Rating<br>(A) | Secondary<br>Inductance<br>(mH Min) | DCR (mΩ Max)      |                     | Hipot<br>(VAC) |
|------------------|----------------------|---------------------------------------|-------------------------------------|-------------------|---------------------|----------------|
|                  |                      |                                       |                                     | Primary<br>(1*-2) | Secondary<br>(5*-4) |                |
| PH9505.050NLT    | 1:50                 | 30                                    | 1.7                                 | 0.5               | 1500                | 3000           |
| PH9505.070NLT    | 1:70                 | 30                                    | 3.0                                 | 0.5               | 2100                | 3000           |
| PH9505.100NLT    | 1:100                | 30                                    | 7.0                                 | 0.5               | 3100                | 3000           |
| PH9505.125NLT    | 1:125                | 30                                    | 11                                  | 0.5               | 4000                | 3000           |
| PH9505.180NLT    | 1:180                | 30                                    | 25                                  | 0.5               | 9000                | 3000           |

### 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.
- To calculate value of terminating resistor (Rt) use the following formula:  

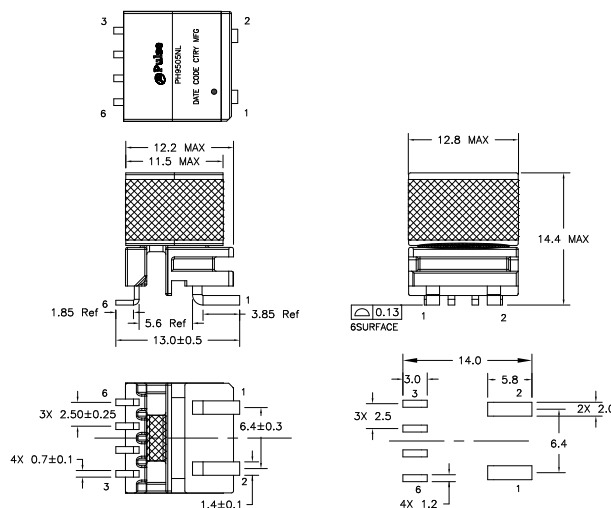
$$R_t (W) = V_{REF} \cdot N / (I_{peak\_primary})$$
- The peak flux density of the device must remain below 2200 Gauss. To calculate the peak flux density for uni-polar current use following formula:  

$$B_{pk} = 8.85 \cdot V_{REF} \cdot (Duty\_Cycle\_Max) \cdot 10^5 / (N \cdot Freq\_kHz)$$

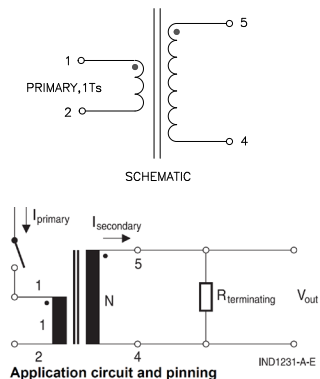
\*for bi-polar current applications divide Bpk (as calculated above) by 2.
- This design complies with basic insulation according to EC60664/ IEC60590-1/IEC61558-1/-2-16 for a working voltage up to 500Vrms and with reinforced insulation according to IEC60664/IEC60950-1 for working voltage up to 300Vrms
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PH9505.100NLT becomes PH9505.100NLT). Pulse complies to industry standard tape and reel specification EIA481.
- The "NL" suffix indicates an RoHS-compliant part number.

Application condition: OVC II, Pollution degree 2, Material Group 3, Altitude up to 2km.  
 The actual creepage distance > 6.5mm and the clearance distance > 4.5mm between primary and secondary windings. This creepage distance is reduced when the transformer is mounted on the proposed pad layout. Refer to the PCB material group and pollution degree to determine if this reduces the working voltage capability.

## Mechanical



## Schematic



Weight ..... 4.3 grams  
 Tape & Reel ..... 150/reel

Dimensions: Inches  
 mm

Unless otherwise specified, all tolerances are ± 0.10  
 0.25

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## For More Information

### Pulse Worldwide Headquarters

15255 Innovation Drive Ste 100  
San Diego, CA 92128  
U.S.A.

Tel: 858 674 8100  
Fax: 858 674 8262

### Pulse Europe

Pulse Electronics GmbH  
Am Rottland 12  
58540 Meinerzhagen  
Germany

Tel: 49 2354 777 100  
Fax: 49 2354 777 168

### Pulse China Headquarters

Pulse Electronics (ShenZhen) CO., LTD  
D708, Shenzhen Academy of  
Aerospace Technology,  
The 10th Keji South Road,  
Nanshan District, Shenzhen,  
P.R. China 518057

Tel: 86 755 33966678  
Fax: 86 755 33966700

### Pulse North China

Room 2704/2705  
Super Ocean Finance Ctr.  
2067 Yan An Road West  
Shanghai 200336  
China

Tel: 86 21 62787060  
Fax: 86 2162786973

### Pulse South Asia

3 Fraser Street  
0428 DUO Tower  
Singapore 189352

Tel: 65 6287 8998  
Fax: 65 6280 0080

### Pulse North Asia

1F., No.111 Xiyuan Rd  
Zhongli City  
Taoyuan City 32057  
Taiwan (R.O.C)

Tel: 886 3 4356768  
Fax: 886 3 4356820

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