# SMT CURRENT SENSE TRANSFORMER

## PL1170


- Maximum Reflow Temperature: 235°C
- Storage Temperature: -55°C to +130°C
- Moisture Sensitivity Level : 1
- Tin/Lead Finish
- Height: 7.1mm Max
- Footprint: 14.6mm x 12.6mm Max
- Current Rating: up to 15 A
- Frequency Range: 50 kHz to 500 kHz

**Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C**

| Part Number | Turns Ratio | Current Rating (A) | Secondary Inductance (mH MIN) | DCR (mΩ MAX) Primary (1,3-2,4) | DCR (mΩ MAX) Secondary (5-6) | Hipot (Vrms) |
|---|---|---|---|---|---|---|
| PL1170 | 1:1:100 | 15 | 14.8 | 1.5 | 930 | 500 |

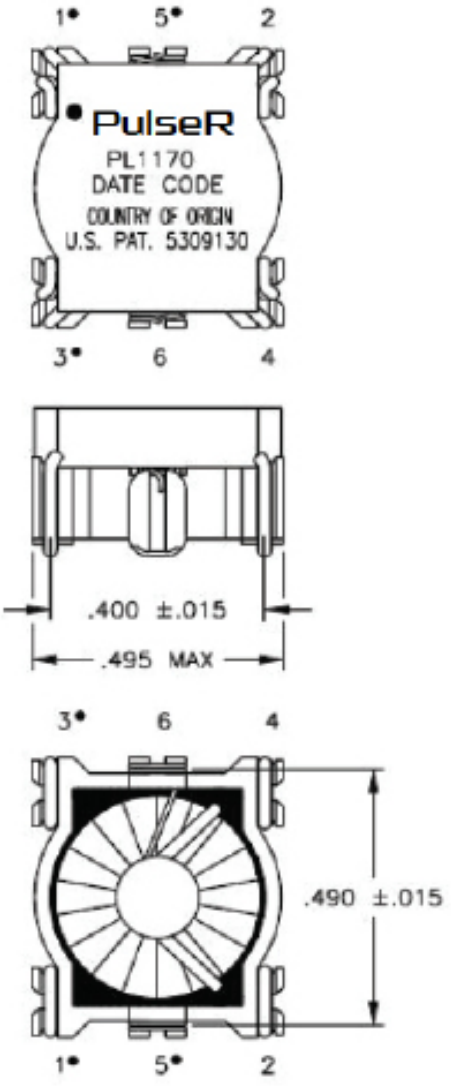
**Notes**:

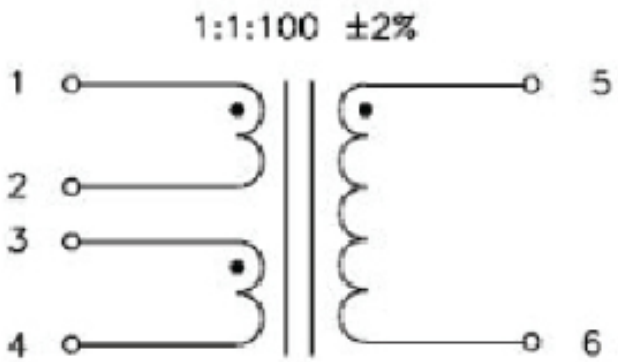
1. Part can be ordered Non-Lead (RoHS compliant) by adding **"NL"** suffix to the part number (i.e. PL1170NL)
2. The temperature of the component (ambient temperature plus the temperature rise) must be within the specified operating temperature range.
3. The maximum current rating is based upon temperature rise of the component and represents the dc current which will cause a typical temperature rise of 40°C with no air flow when both single turn windings connected in parallel.
4. To calculate the value of the terminating resistor (Rt) use the following formula: Rt Ω = $V_{REF}$ * N / (Ipeak_primary).
5. The peak flux density of the device must remain below 2000 Gauss. To calculate the peak flux density for a uni-polar cur-rent use the formula below :
   Bpk = 14.29 * Vref * (Duty_Cycle_Max) * 10 5 / ( N * Freq_kHz)
   for bi-polar current applications divide Bpk as calculated above by 2.
6. Optional Tape & Reel packaging can be ordered by adding a **"T"** suffix to the part number (i.e. PL1170 becomes PL1170T).

## Mechanical

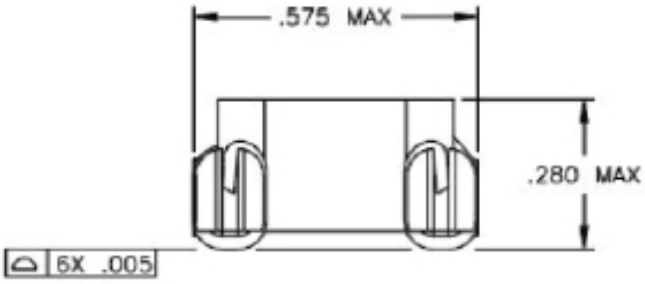
## Schematic

**PL1170**




SCHEMATIC

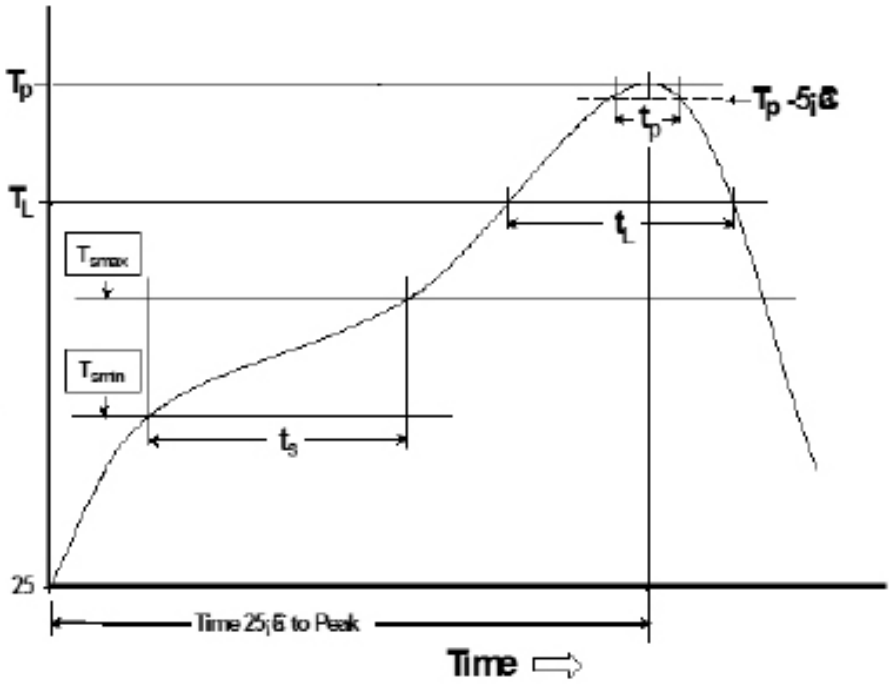



Part hardened for aerospace use.

Pan/Tube Size=40

Weight.....3.53grams

## Tin/Lead Recommended Reflow Profile (Based on J-STD-020D)




| $T_{SMIN}$ (°C) | $T_{SMAX}$ (°C) | $T_L$ (°C) | $T_P$ (°C MAX) | $t_S$ (s) | $t_L$ (s) | $t_P$ (s MAX) | Ramp-up rate ($T_L$ to $T_P$) | Ramp-down rate ($T_P$ to $T_L$) | Time 25°C to peak temperature (s MAX) |
|---|---|---|---|---|---|---|---|---|---|
| 100 | 150 | 183 | 235 | 60-120 | 60-150 | 20 | 3°C/s MAX | 6°C/s MAX | 360 |

Notes:

1. All temperatures measured on the package leads.
2. Maximum times of reflow cycle: 2.

**For More Information**

PulseR North America Headquarters
311 Sinclair Road,
Bristol, PA 19007-1524
U.S.A.

Tel: +1.215. 781. 6400
Fax: +1.215. 781. 6403

For Global Sales Representative and Locations Visit:
http://www.pulseruggedized.com