# SMT CURRENT SENSE TRANSFORMERS

Ruggedized

## PL325X

- Height: 5.5mm Max
- Footprint: 8.4mm x 7.2mm Max Currency Rating: Up to 10A
- Frequency Range: 50kHz to 1MHz
- Surface Mount Package: Pick and Place Compatible
- Varnished Windings
- Operating Temperature: -55°C to +130°C
- Storage Temperature: -55°C to +130°C
- Isolation Voltage: 500 Vrms Max
- Moisture Sensitivity Level: 1
- Solder Reflow Processing: 235°C Peak Temperature, ΔT<3°C/sec
- Lead Finish: Hot Solder Dipped – Sn63%/Pb37%
- Meets Environmental Requirements: MIL-PRF-27F Grade 5 Class
- Space Grade versions that meet workmanship LAW MIL-STD-981 are available upon special request.

Electrical Specifications @ 25°C — Operating Temperature -55°C to +130°C

| Part Number [5,6] | Turns Ratio | Current Rating (A) [2] | Secondary Inductance (mH MIN) | DCR (mΩ MAX) | | Hipot (VRMS) |
|---|---|---|---|---|---|---|
| | | | | Primary (8-7) | Secondary (1-3) | |
| PL3250 | 1:20 | 10 | 0.08 | 6 | 550 | 500 |
| PL3251 | 1:30 | 10 | 0.18 | 6 | 870 | 500 |
| PL3252 | 1:40 | 10 | 0.32 | 6 | 1140 | 500 |
| PL3253 | 1:50 | 10 | 0.50 | 6 | 1500 | 500 |
| PL3254 | 1:60 | 10 | 0.72 | 6 | 2250 | 500 |
| PL3255 | 1:70 | 10 | 0.98 | 6 | 4750 | 500 |
| PL3256 | 1:100 | 10 | 2.00 | 6 | 5500 | 500 |
| PL3257 | 1:125 | 10 | 3.00 | 6 | 6500 | 500 |

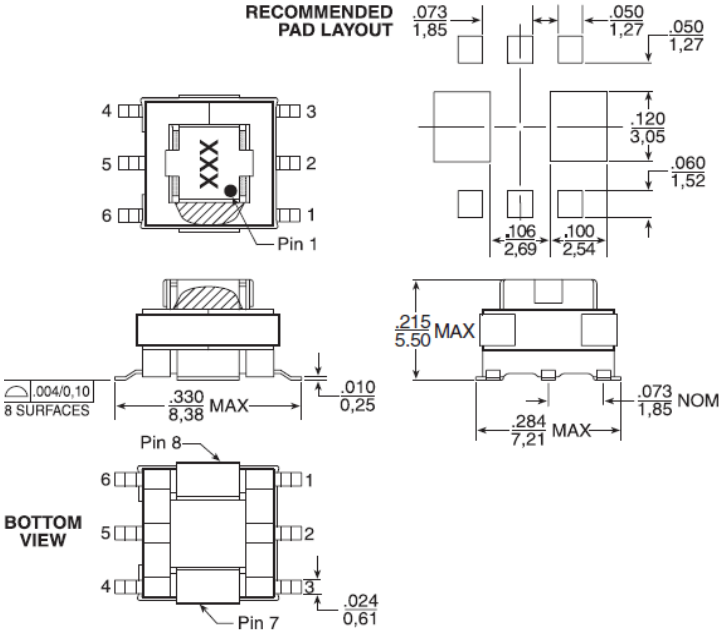
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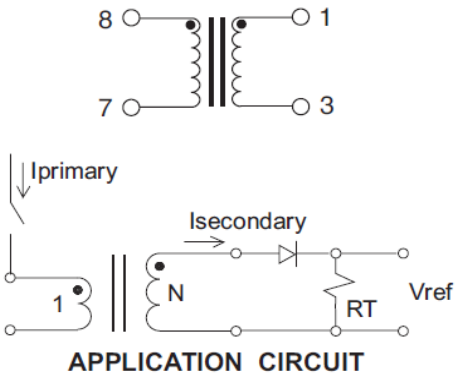
1. The temperature of the component (ambient temperature plus temper-ature rise) must be within the specified operating temperature range.
2. The maximum current rating is based upon temperature rise of the component and represents the dc current which will cause a typical temperature rise of 40°C with no air flow when both one turn windings connected in parallel
3. To calculate the value of the terminating resistor (Rt) use the following formula: $Rt\ (W) = V_{REF} * N / (Ipeak_primary)$
4. The peak flux density of the device must remain below 2000 Gauss. To calculate the peak flux density for a uni-polar current use the following formula:
   $B_{PK} = 14.29 * V_{REF} * (Duty_Cycle_Max) * 10^8 / ( N * Freq_kHz)$
   * for bi-polar current applications divide $B_{PK}$ as calculated above by 2.
5. For RoHS compliant parts add suffix NL to the part number.
6. Add T suffix to the part number for tape and reel packaging.

## Mechanical

## Schematic

### PL325X



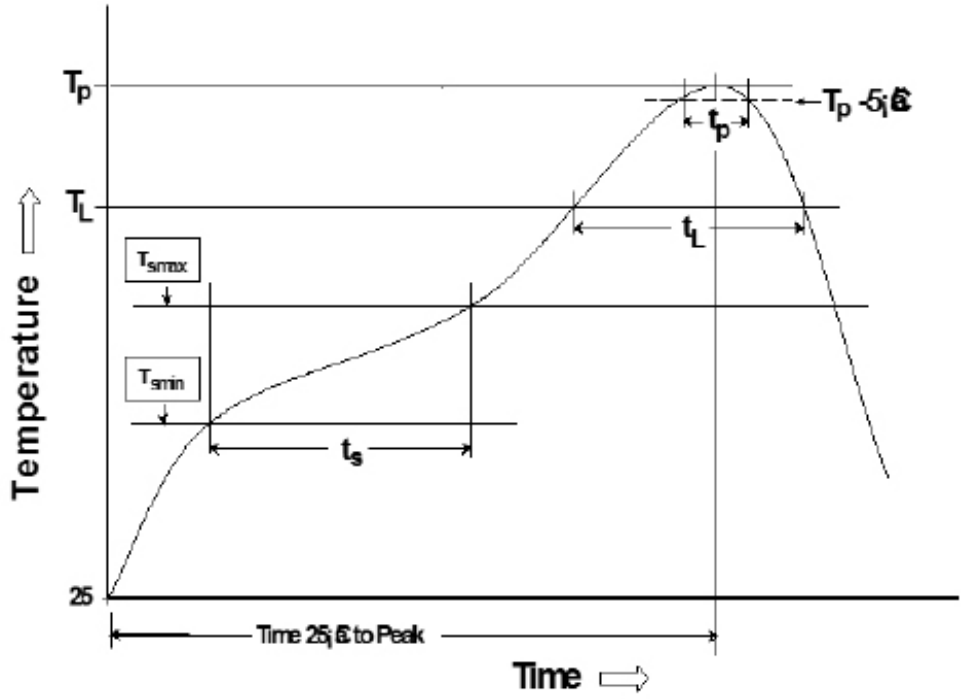




**Weight** . . . . . .0.34 grams
**Tray** . . . . . 120/tray
**Tape & Reel** . . . . . 900/reel
**Coplanarity** . . . . . 0.004 inches

**Dimensions:** Inches / mm

Unless otherwise specified, all tolerances are ± .010 / 0,25

## Transceiver 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 | 225 | 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

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