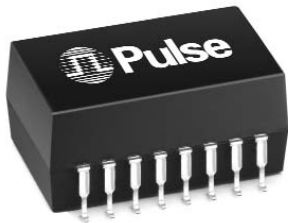


T1/E1/CEPT/ISDN-PRI TRANSFORMERS

Reinforced Insulation, 3KVrms, SMT



- Dual surface mount package contains both transmit and receive transformers
- Models matched to leading transceiver ICs
- 3KV reinforced insulation barrier approved to UL

3KV Reinforced!

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

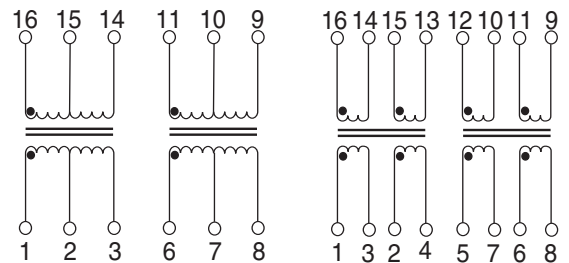
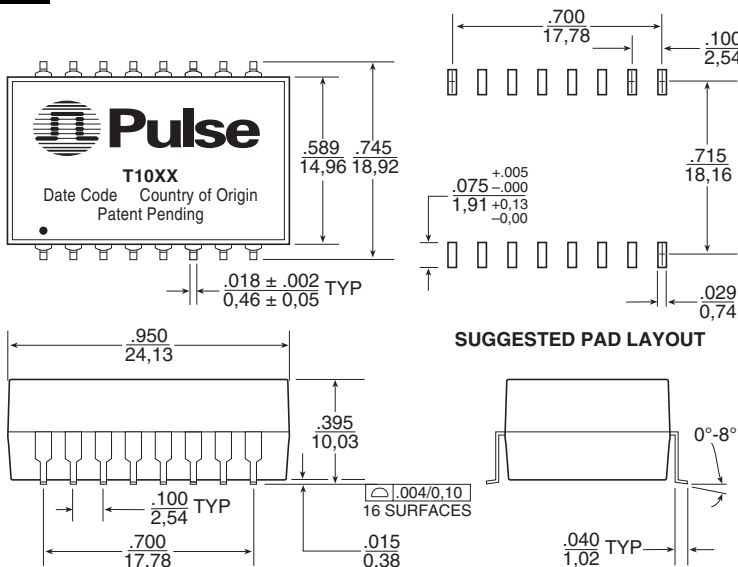
| Part Number | Turns Ratio ^{A,B} (Pri:Sec ±2%) | OCL @ 25°C (mH MIN) | C _{ww} (pF MAX) | DCR Pri (Ω MAX) | DCR Sec (Ω MAX) | Package/ Schematic | Primary Pins |
|--------------------|---|------------------------|-----------------------------|--------------------|--------------------|-----------------------|-----------------|
| T1030 | 1CT:1CT & 1CT:1CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.00 & 1.00 | ZIN / 1 | 1-3, 6-8 |
| T1031 | 1CT:1CT & 1CT:2CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.00 & 1.70 | ZIN / 1 | 1-3, 6-8 |
| T1081* | 1CT:1CT & 1CT:1.5CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.10 | 1.10 & 1.55 | ZIN / 1 | 1-3, 6-8 |
| T1032 | 1CT:1.15CT & 1CT:1CT | 1.60 & 1.60 | 15 & 15 | 1.10 & 1.00 | 1.10 & 0.90 | ZIN / 1 | 16-14, 6-8 |
| T1033 | 1CT:1.15CT & 1CT:1.15CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.15 & 1.15 | ZIN / 1 | 1-3, 6-8 |
| T1034 | 1CT:1.15CT & 1CT:2CT | 1.50 & 1.20 | 15 & 15 | 1.10 & 1.00 | 1.20 & 1.70 | ZIN / 1 | 16-14, 6-8 |
| T1035 | 1CS:1CS & 1CS:1.36CS | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.00 & 1.20 | ZIN / 2 | 1-4, 5-8 |
| T1038 | 1CT:1CT & 1CT:1.36CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 0.90 & 1.20 | ZIN / 1 | 1-3, 6-8 |
| T1036 | 1CT:1.36CT & 1CT:1.36CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.20 & 1.20 | ZIN / 1 | 1-3, 6-8 |
| T1037 | 1CT:1.41CT & 1CT:1.41CT | 1.20 & 1.20 | 15 & 15 | 1.10 & 1.10 | 1.35 & 1.35 | ZIN / 1 | 16-14, 11-9 |
| T1080* | 1CT:1.41CT & 1CT:1.41CT | 1.20 & 1.20 | 15 & 15 | 1.10 & 1.10 | 1.35 & 1.35 | ZIN / 1 | 1-3, 11-9 |
| T1039 | 1CT:2CT & 1CT:1.08CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.10 | 1.70 & 1.25 | ZIN / 1 | 16-14, 6-8 |
| T1043 | 1CT:2CT & 1CT:1.14CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.25 | 1.70 & 1.35 | ZIN / 1 | 16-14, 6-8 |
| T1044 | 1CT:2CT & 1CT:1.36CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.65 & 1.15 | ZIN / 1 | 16-14, 6-8 |
| T1045 | 1CT:2CT & 1CT:2CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.70 & 1.70 | ZIN / 1 | 16-14, 6-8 |
| T1047 | 1CT:2.3CT & 1CT:2CT | 1.20 & 1.20 | 15 & 15 | 1.00 & 1.10 | 2.00 & 1.80 | ZIN / 1 | 16-14, 6-8 |
| T1049 ^D | 1CT:1/1.26 & 1CT:2CT | 1.50 & 1.20 | 15 & 15 | 1.00 & 1.00 | 1.30 & 1.65 | ZIN / 1 | 16-14, 6-8 |
| T1082* | 1CT:2.42CT & 1CT:2.42CT | 1.30 & 1.30 | 17 & 17 | 1.20 & 1.20 | 2.30 & 2.30 | ZIN / 1 | 1-3, 6-8 |

NOTE: *Agency approvals pending for T1080, T1081 and T1082.

Mechanical

Schematics

ZIN



Weight81 grams
 Tube20/tube
 Tray250/tray

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
 Unless otherwise specified, all tolerances are ± .010 / 0.26

USA 858 674 8100 • UK 44 1483 401 700 • France 33 3 84 35 04 04 • Singapore 65 6287 8998 • Shanghai 86 21 32181071 • China 86 769 5538070 • Taiwan 886 2 26980228

T1/E1/CEPT/ISDN-PRI TRANSFORMERS

Reinforced Insulation, 3KVrms, SMT



Transformer Selection Guide

| Company | IC Part Number | Comments | Pulse Part Number |
|------------------------|--------------------------------------|------------------------------|--------------------|
| Rockwell/ Brooktree | BT8370 | | T1035 |
| | UGA 510-1 | | T1031 |
| | R8069, R8069A, R8069B | | T1031 |
| Crystal | 61534, 61544, 61574, 6158, 61535 | T1 & PCM-30 | T1045 |
| | 61535A, 61574A, 61575, 6158A | T1 | T1034 |
| | 61535A, 61574A, 61575, 6158A | PCM-30, 75, 120 ^D | T1049 |
| | 6152 | | T1044 |
| | 61584 | IQ3 | T1045 |
| | 61584 | IQ5 | T1033 |
| | 61581 | HOST MODE | T1081 |
| Dallas | DS2186, DS2187 | | T1044 |
| | DS2151, DS2152, DS2153, DS2154 | T1, E1 | T1032 |
| | DS21352/DS21354 | T1, E1 | T1031 |
| Exar | T5650, T5620, T5675, T5681, T5683 | | T1045 |
| | 56L22, 56L85, C240, C260, C262, C277 | | T1045 |
| | T5791, T5793, T5794 | | T1049 ^C |
| | T5684 | | T1044 |
| | T7288 | | T1044 |
| | | | T1044 |
| Level One | LXT 300, LXT 301, LXT 305 | | T1045 |
| | LXT 304A, LXT 305A | T1 | T1034 |
| | LXT 304A, LXT 305A | PCM-30, 75, 120 ^D | T1049 |
| | LXT 310, LXT 311 | | T1031 |
| | LXT 318, LXT 319 | | T1031 |
| | LXT 332 | | T1045 |
| | LXT 332 | T1 | T1047 |
| | LXT 360, LXT 361, LXT 370 | | T1031 |
| Lucent Technologies | T7288 | CEPT | T1044 |
| | T7289 | DS1 | T1034 |
| | T7290 | T1 & CEPT | T1044 |
| | T7690 | DS1 | T1033 |
| | T7690 | CEPT | T1036 |
| | T7693 | | (Note E) |
| PMC-Sierra | PM4341, PM6341 | | T1044 |
| | PM4351 | | (Note E) |
| | PM4314QDSX | | T1044 |
| Siemens | PEB 2254, PEB2255 | | T1037 |
| | PEB 22554 | | T1031 |
| VLSI | VP14Q574 | T1 | T1034 |
| | VP14Q574 | E1 | T1049 |
| | VP14Q575 | T1 | T1034 |
| | VP14Q575 | E1 75 | T1049 |
| | | | T1049 |

Notes From Tables

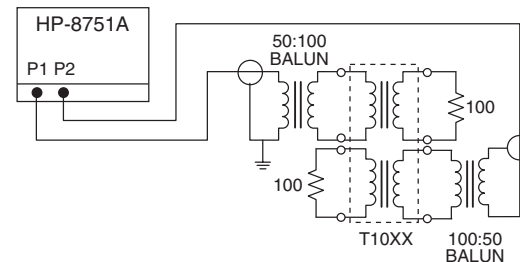
- A. OCL (primary inductance) is measured at the primary winding. Turns ratio is specified primary: secondary. (CT = Center Tap; CS = Split Center Tap).
- B. To make 1CT:1 ratio from 1CT:2CT ratio, use one-half of the secondary (2CT) winding.
- C. It is possible to use the same transformer model for the three impedance levels of T1 (100Ω) and CEPT (75Ω & 120Ω).
- D. Dual Ratio Transformers — These transformers have tapped secondary windings to provide two turns ratios (T/R). Use the entire primary winding and connect the secondary pins listed below to obtain the desired turns ratio:

| Part Number | Turns Ratio 1 | Secondary Pins | Turns Ratio 2 | Secondary Pins |
|-------------|---------------|----------------|---------------|----------------|
| T1049 | 1:1 | 2-3 | 1:1.26 | 1-3 |

- E. Contact Applications Engineering for this product.
- F. Standard packaging for the surface mount "ZIN" package is anti-static tubes. Optional tray packaging can be ordered by adding an "R" suffix to the part number, (i.e. T1030R).

Application Notes

- Safety Standards Recognition** — All transformers (excluding T1080 and T1081) listed in this data sheet are: UL1459, UL1950, and CS950 approved per Underwriters Laboratories — file E133523, Reinforced Insulation.
- Crosstalk Attenuation** — The dual packages contain transmit and receive transformers side by side, sufficient crosstalk attenuation is achieved by the inherent characteristics of the toroid cores as well as by their proper positioning. The crosstalk attenuation is typically 55dB or better from 100kHz to 10MHz. This result was established with the test circuit shown below.



- Common Mode Chokes** — The "high-frequency" 4-line common mode chokes shown below provide an effective means of compliance with national and international regulations on EMI. They are designed to be used in conjunction with Pulse's T1/CEPT transformers. Crosstalk is typically -70db at 1MHz and -55db at 10MHz.

High Frequency Common Mode Chokes for Telecom Applications (4-Lines)

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

| Pulse Part Number | Turns Ratio (±5%) | OCL (μH MIN) | C _{w/w} (pF MAX) | L _L (μH MAX) | DCR (Ω MAX) | Isolation (Vrms MIN) | Package |
|-------------------|-------------------|--------------|---------------------------|-------------------------|-------------|----------------------|---------------|
| PE-65554 | 1:1:1:1 | 24.0 | 15 | .20 | 0.30 | 500 | Through Hole |
| PE-65555 | 1:1:1:1 | 8.0 | 10 | .20 | 0.25 | 500 | Through Hole |
| PE-65854 | 1:1:1:1 | 47.0 | 16 | .20 | 0.30 | 500 | Surface Mount |
| PE-65857 | 1:1:1:1 | 24.0 | 15 | .23 | 0.30 | 500 | Surface Mount |

Note: Additional common mode chokes to improve EMI performance are available. See data sheet G002 for mechanicals and schematics of common mode chokes.

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