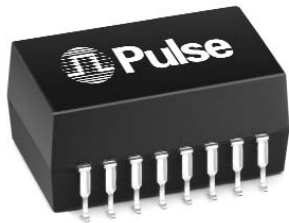


# T1/E1/CEPT/ISDN-PRI TRANSFORMERS

## 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

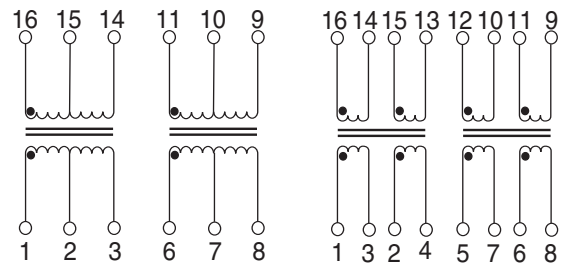
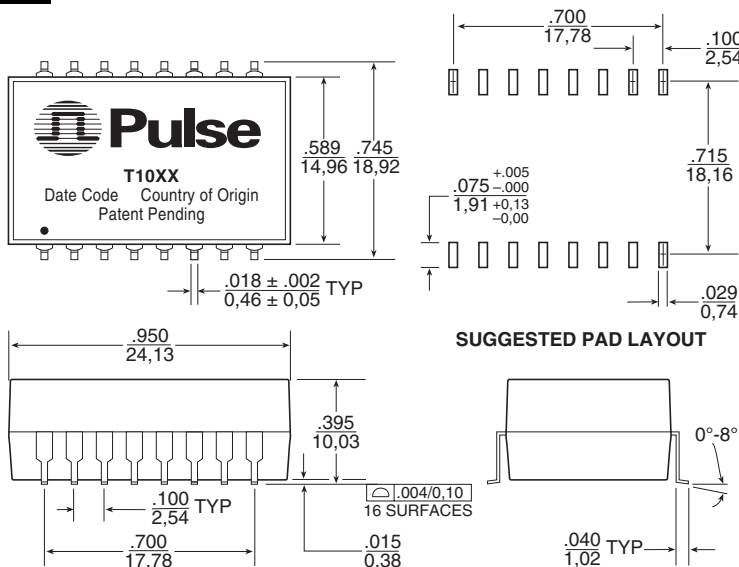
Part Number	Turns Ratio <sup>A,B</sup> (Pri:Sec ±2%)	OCL @ 25°C (mH MIN)	C <sub>ww</sub> (pF MAX)	DCR Pri (Ω MAX)	DCR Sec (Ω MAX)	Package/ Schematic	Primary Pins
T1030	1CT:1CT & 1CT:1CT	1.20 & 1.20	15 & 15	1.00 & 1.00	1.00 & 1.00	ZIN / 1	1-3, 6-8
T1031	1CT:1CT & 1CT:2CT	1.20 & 1.20	15 & 15	1.00 & 1.00	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 <sup>D</sup>	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**



Weight ..... .81 grams  
 Tube ..... .20/tube  
 Tray ..... .250/tray

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

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 <sup>D</sup>	T1049
	6152		T1044
	61584	IQ3	T1045
	61584	IQ5	T1033
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 <sup>C</sup>
	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 <sup>D</sup>	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	VPI4Q574	T1	T1034
	VPI4Q574	E1	T1049
	VP14Q575	T1	T1034
	VP14Q575	E1 75	T1049

### Notes From Tables

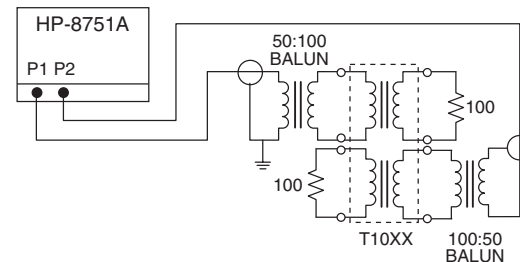
- A. OCL (primary inductance) is measured at the primary winding. Turns ratio is specified primary: secondary. (CT = Center Tap; CS = Split Center Tap).
- B. To make 1CT:1 ratio from 1CT:2CT ratio, use one-half of the secondary (2CT) winding.
- C. It is possible to use the same transformer model for 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 <sub>w/w</sub> (pF MAX)	L <sub>L</sub> (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.

### For More Information:

#### Pulse Worldwide Headquarters

12220 World Trade Drive  
San Diego, CA 92128  
U.S.A.

[www.pulseeng.com](http://www.pulseeng.com)  
TEL: 858 674 8100  
FAX: 858 674 8262

#### Pulse Northern Europe

3 Huxley Road  
Surrey Research Park  
Guildford, Surrey GU2 5RE  
United Kingdom

TEL: 44 1483 401700  
FAX: 44 1483 401701

#### Pulse Southern Europe

Zone Industrielle  
F-39270  
Orgelet  
France

TEL: 33 3 84 35 04 04  
FAX: 33 3 84 25 46 41

#### Pulse China Headquarters

No. 1  
Industrial District  
Changan, Dongguan  
China  
TEL: 86 769 5538070  
FAX: 86 769 5538870

#### Pulse North China

Room 1002  
No. 819  
Nanjing West Rd  
Shanghai  
China  
TEL: 86 21 32181071  
FAX: 86 21 32181396

#### Pulse South Asia

150 Kampong Ampat  
#07-01/02  
KA Centre  
Singapore 368324  
TEL: 65 6287 8998  
FAX: 65 6280 0080

#### Pulse North Asia

3F-4, No. 81, Sec. 1  
Hsin Tai Wu Road  
Hsi-Chih  
Taipei Hsien  
Taiwan  
TEL: 886 2 26980228  
FAX: 886 2 26980948

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners.

© Copyright, 2006. Pulse Engineering, Inc. All rights reserved.

[www.pulseeng.com](http://www.pulseeng.com)

T617.A (1/06)