

# T1/E1/CEPT/ISDN-PRI INTERFACE MODULES

## Dual Surface Mount Transformer Modules, 1500 Vrms, Extended Temperature Range



- Optimized for enhanced EMC performance
- Extended temperature range
- Dual SMT package contains transformers with Common Mode Chokes on both transmit and receive channels
- Models matched to leading transceiver ICs
- Patented Interlock Base construction for high reliability
- UL1950 approved

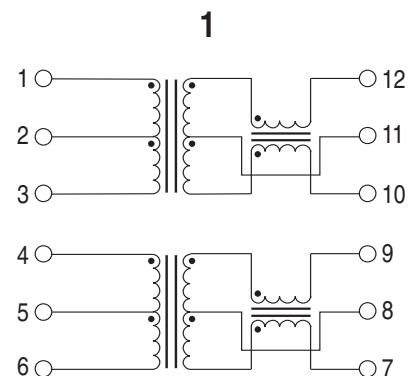
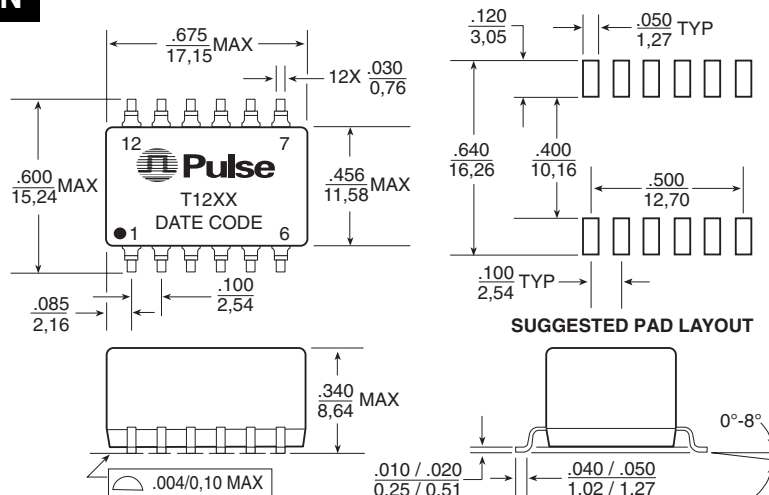
### Electrical Specifications @ 25°C

Part Number	Turns Ratio <sup>2</sup> (Pri:Sec ± 2%)	Secondary OCL @ 25°C (mH MIN)	L <sub>L</sub> (μH MAX)	C <sub>w/w</sub> (pF MAX)	DCR Pri (Ω MAX)	Package/ Schematic	Primary Pins
<b>EXTENDED TEMPERATURE RANGE MODELS<sup>1</sup> – OPERATING TEMPERATURE -40°C TO +85°C</b>							
T1207	1CT:2CT & 1CT:2CT	1.20	.60	25	.60	AN/1	1-3, 4-6
T1208	1CT:2CT & 1CT:1.36CT	1.20	.60	30	.70	AN/1	1-3, 4-6
T1209	1CT:1.15CT & 1CT:2CT	1.20	.60	35	.80	AN/1	1-3, 4-6
T1210	1CT:1.26CT & 1CT:2CT	1.20	.60	30	.80	AN/1	1-3, 4-6
T1220	1CT:1CT & 1CT:1CT	1.20	.60	35	.90	AN/1	1-3, 4-6
T1211	1CT:1.15CT & 1CT:1.15CT	1.20	.60	35	.80	AN/1	1-3, 4-6
T1212	1CT:1CT & 1CT:2CT	1.20	.60	35	.90	AN/1	1-3, 4-6
T1213	1CT:1.15CT & 1CT:1CT	1.20	.60	35	.90	AN/1	1-3, 4-6
T1214	1CT:1.36CT & 1CT:1.36CT	1.20	.60	30	.80	AN/1	1-3, 4-6
T1215	1CT:1.41CT & 1CT:1.41CT	1.20	.60	30	.70	AN/1	1-3, 4-6
T1216	1CT:2.3CT & 1CT:2CT	1.20	.60	25	.60	AN/1	1-3, 4-6
T1217	1CT:2.42CT & 1CT:2.42CT	1.20	.60	25	.60	AN/1	1-3, 4-6
T1218	1CT:1CT & 1CT:1.36CT	1.20	.60	35	.90	AN/1	1-3, 4-6
T1219	1CT:2.4CT & 1CT:1CT	1.20	.60	35	.90	AN/1	1-3, 4-6

### Mechanical

### Schematics

#### AN



Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0.25}$

Weight ..... 4.0 grams  
 Tape & Reel ..... .250/reel  
 Tube ..... .30/tube

# T1/E1/CEPT/ISDN-PRI INTERFACE MODULES



## Notes From Tables

- Extended Temperature Range Models** — For extended temperature range transformers (-40°C to +85°C operating temperature range), OCL (Open Circuit Inductance) is specified at both -40°C and +25°C. At -40°C, OCL is 600 µH minimum. All other parameters are specified at +25°C only. Standard temperature range is 0°C to +70°C.
- Turns ratio is specified primary: secondary (CT = Center Tap).
- Standard packaging for the surface mount package is anti-static tubes. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number, (i.e. T1220T).

## Application Notes

- ET Product** — All coils have an ET product of 10 V-µsec minimum.
- Flammability** — Materials used in the products are recognized as UL94-VO approved. Products meet the requirements of IEC 695-2-2 (Needle Flame Test).
- Balance Characteristics** — The transformers meet the requirements for longitudinal balance of FCC part 68.
- Common Mode Rejection Ratio** — the CMRR for all transformers is better than 50 dB at 1 MHz. A typical test circuit is shown below.
- Crosstalk Attenuation** — In the packages which 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 65 dB or better. This result was established with the test circuit shown below.

- Return Loss** — ITU-T G.703 and European national regulatory documents specify minimum return loss levels. The transformers will allow these limits to be complied within the situations where they are applicable.

Frequency	50-100 KHz	100 KHz-2 MHz	2-3 MHz
Return Loss			
XMIT	9 dB	15 dB	11 dB
RCV	12 dB	18 dB	14 dB

- Surge Voltage Capability** — All transformers and chokes meet surge voltage tests according to the most stringent regulatory documents, when used with the proper voltage and current suppression devices:
  - Metallic Voltage: 800 V peak, 10/560 µsec
  - Longitudinal Voltage: 2,400 V peak, 10/700 µsec
- Isolation Voltage** — 100% of transformers are tested during production to the specified isolation voltage level.
- General Information** — The transformers are specifically designed for use in 1.544 Mbps (T1), 2.048 Mbps (CEPT) and ISDN Primary rate (PRI) interface applications. They are matched to the majority of the line interface transceiver ICs currently available. Use of the proper transformer allows the interface circuit to comply with ITU-T G.703 and other standards regarding pulse waveform, return loss, and balance.
- Transformer Selection Guide** — Please contact Pulse Application Engineering or see our website for the latest Pulse Transformer Selection Guide.

## For More Information :

UNITED STATES (Worldwide)	UNITED KINGDOM (Northern Europe)	FRANCE (Southern Europe)	SINGAPORE (Southern Asia)	TAIWAN, R.O.C. (Northern Asia)	HONG KONG (China/Hong Kong)	DISTRIBUTOR
12220 World Trade Drive San Diego, CA 92128 U.S.A. http://www.pulseeng.com TEL: 858 674 8100 FAX: 858 674 8262	1 & 2 Huxley Road The Surrey Research Park Guildford, Surrey GU2 5RE United Kingdom TEL: 44 1483 401700 FAX: 44 1483 401701	Zone Industrielle F-39270 Orgelet France TEL: 33 3 84 35 04 04 FAX: 33 3 84 25 46 41	150 Kampong Ampat #07-01/02 KA Centre Singapore 368324 TEL: 65 6287 8998 FAX: 65 6280 0080	3F-4, No. 81, Sec. 1 HsinTai Wu Road Hsi-Chih, Taipei Hsien Taiwan, R.O.C. Tel: 886 2 2698 0228 FAX: 886 2 2698 0948	9/F, Phase 2, Tai Sang Shatin Warehouse Centre 6 Wong Chuk Yeung Street Fotan, Shatin, Hong Kong TEL: 852 2788 6588 FAX: 852 2776 1055	

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 products and/or registered trademarks of their respective owners.