T1/CEPT/ISDN-PRI TRANSFORMERS
Dual Surface Mount, 1500 Vrms, Small Package

- Single port T1/E1 solution
- Configurable for TP and Coax cable termination
- Transfer-molded, IC-grade packaging
- UL1950 approved to basic isolation

Electrical Specifications @ 25°C

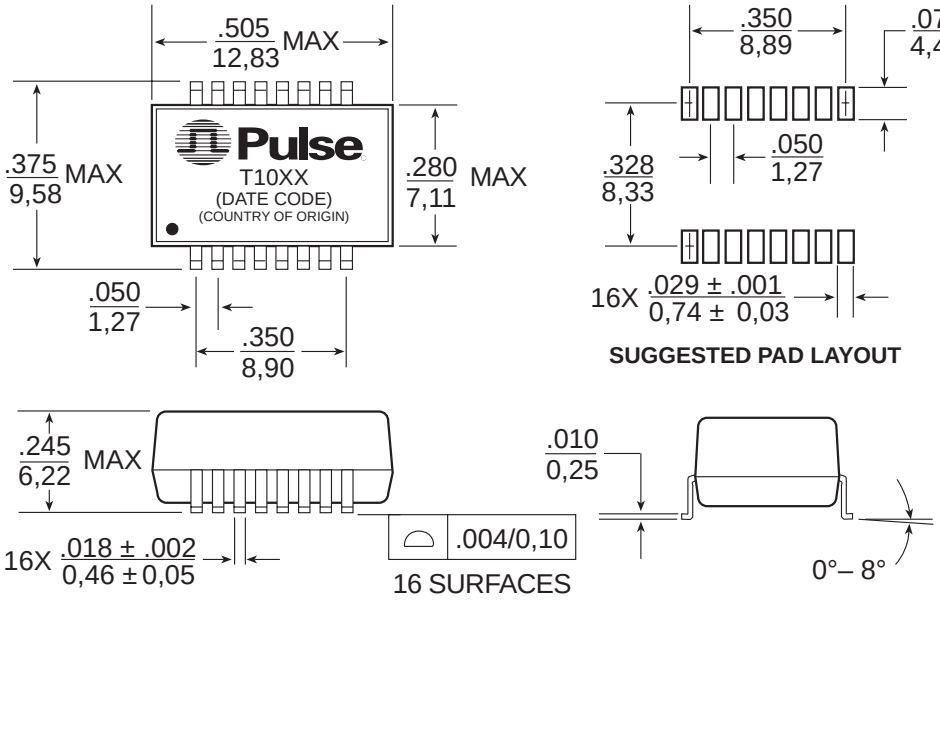
Part Number	Turns Ratio[1] (Pri:Sec ± 2%)	OCL (mH MIN)	L_L (µH MAX)	$C_{w/w}$ (pF MAX)	DCR Pri (Ω MAX)	DCR Sec (Ω MAX)	Package/ Schematic	Primary Pins
T1021	2CT : 1/1.26 & 2CT : 1/1.26	1.5 & 1.5	0.50 & 0.50	40 & 40	0.70 & 0.70	1.00 & 1.00	BH/1	1-3, 11-9
T1075	2CS : 1.57/2 & 2CS : 1.57/2	1.5 & 1.5	0.50 & 0.50	40 & 40	0.70 & 0.70	1.00 & 1.00	BH/2	1-2, 5-6

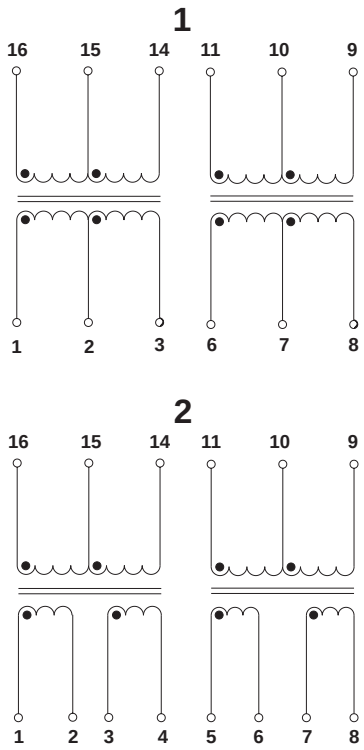
NOTE: Optional Tape & Reel packaging can be ordered by adding a **"T"** suffix to the part number (i.e: T1021**T**)

Mechanical

Schematics

BH





Weight . . . . . .1.0 grams
Tape & Reel 600/reel
Tube 40/tube

Dimensions: Inches / mm
Unless otherwise specified, all tolerances are ± .010 / 0,25

T1/CEPT/ISDN-PRI TRANSFORMERS
Dual Surface Mount, 1500 Vrms, Small Package

IC Part Number	Comments	Standard Temp. Trans./Rec.
Brooktree		
UGA 510-1	–	T1021
R8069, R8069A, R8069B		
VLSI		
VP14Q575	E1 75	T1021
VP14Q575	E1 120	
Siemens		
PEB 2235, PEB 2235A1, PEB 2235B1	T1	T1075
PEB 2235, PEB 2235A1, PEB 2235B1	CEPT 75	
PEB 2235, PEB 2235A1, PEB 2235B1	CEPT 120	

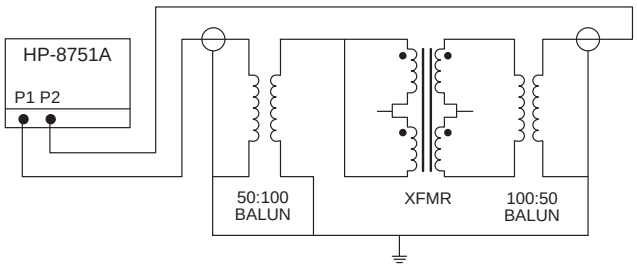
1. **Turns Ratio** – The turns ratio of these devices have been designed, in conjunction with semiconductor vendor recommendations, to allow connections to various terminations (e.g. 75 or 120 Ω with the same transformer). For example T1075 can be used with the Siemens PEB 2235 to achieve connection to the 75 or 120 Ω cable. For 75 Ω termination, the PEB 2235 requires the following turns ratio: 1:1.57 (Tx) and 1:1.26 (Rx) which can be achieved using pins (1-2):(15-16) for Tx and (15-16):(1-4) for Rx. Similarly, for 120 Ω, the following turns ratio are required: 1:2 (Tx) and 1:1 (Rx), which are pins (1-2):(16-14) for Tx and (1-4):(16-14) for Rx on the T1075.
2. **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.

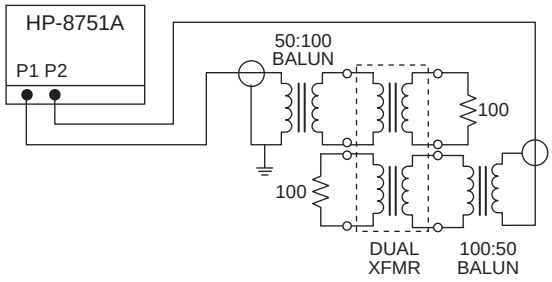
3. **Frequency**	50-100 KHz	100 KHz-2 MHz	2-3 MHz
Return Loss			
XMIT	9 dB	15 dB	11 dB
REC	12 dB	18 dB	14 dB

4. **Surge Voltage Capability** – All transformers and chokes meet surge voltage tests according to the most stringent regulatory documents:

   Metallic Voltage: 800 V peak, 10/560 µsec
   Longitudinal Voltage: 2,400 V peak, 10/700 µsec

5. **Flammability** – Materials used in the products are recognized as UL94-VO approved. Products meet the requirements of IEC 695-2-2 (Needle Flame Test).
6. **Safety Agency Recognition** – These parts are recognized to meet Underwriter Laboratories, UL 1950 to basic, per file E133523 (S).
7. **Common Mode Rejection Ratio** – the CMRR for all transformers is better than 50 dB at 1 MHz. A typical test circuit is shown below.
8. **Crosstalk Attenuation** – In the dual 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 50 dB or better from 100 KHz to 10 MHz. This result was established with the test circuit shown below.





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)	$C_{w/w}$ (pFH MAX)	L_L (µH MAX)	DCR (Ω MAX)	Isolation (Vrms MIN)	Package
PE-65554	1 : 1 : 1 : 1	24.0	15	0.20	0.30	500	Through Hole
PE-65555	1 : 1 : 1 : 1	8.0	10	0.20	0.25	500	Through Hole
PE-65854	1 : 1 : 1 : 1	47.0	16	0.20	0.30	500	Surface Mount
PE-65857	1 : 1 : 1 : 1	24.0	15	0.23	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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