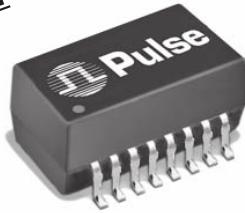


T1/CEPT/ISDN-PRI TRANSFORMERS

Dual Surface Mount, 1500 Vrms, Small Package



- RoHS peak reflow temperature rating 245°C
- 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

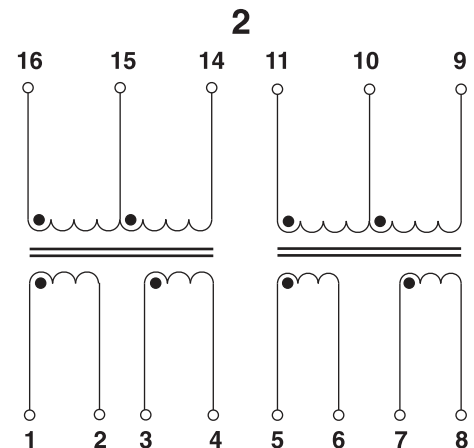
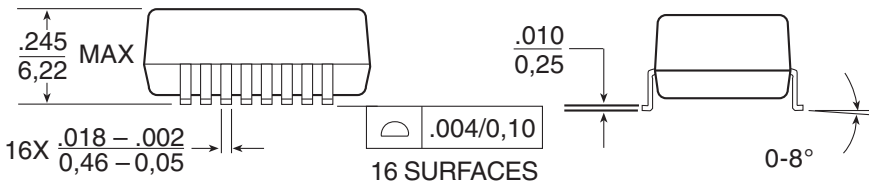
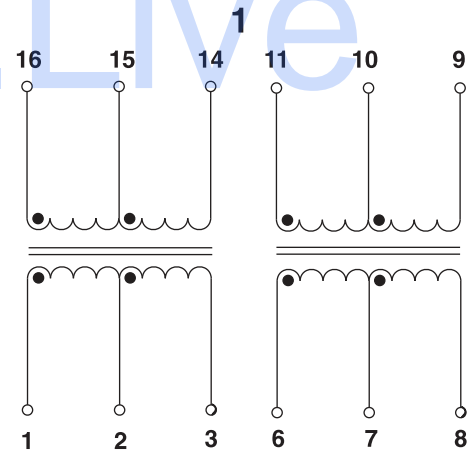
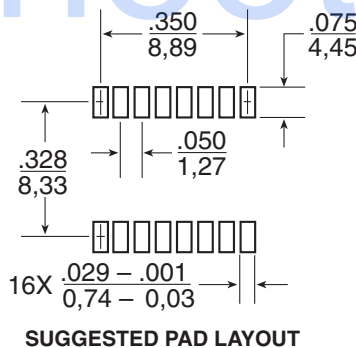
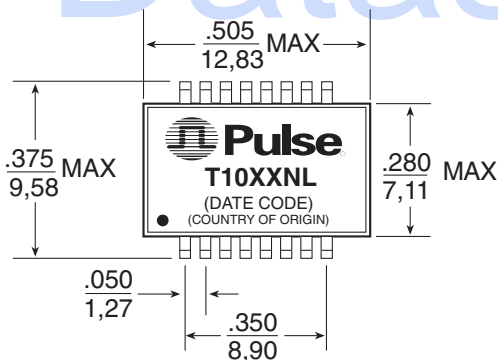
| RoHS-6 Compliant Part Number | Turns Ratio ¹ (Pri:Sec ± 2%) | OCL (mH MIN) | L (μH MAX) | Cw/w (pF MAX) | DCR Pri (W MAX) | DCR Sec (W MAX) | Package/Schematic | Primary Pins |
|------------------------------|-----------------------------------------|--------------|-------------|---------------|-----------------|-----------------|-------------------|--------------|
| T1021NL | 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 |
| T1075NL | 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 (such as T1021NLT)

Mechanical

Schematics

BH



Weight 1.0 grams
 Tape & Reel 600/reel
 Tube40/tube

Dimensions: $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified, all tolerances are $\pm \frac{.010}{0.25}$

T1/CEPT/ISDN-PRI TRANSFORMERS

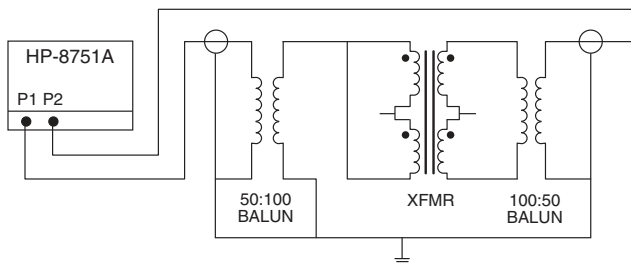
Dual Surface Mount, 1500 Vrms, Small Package



| IC Mfr. | IC Part Number | Comments | Standard Temp. TX / RX |
|-----------|----------------------------------------------------------------------------------------------------------|---------------------------|------------------------|
| Brooktree | UGA 510-1 R8069, R8069A, R8069B | — | T1021NL |
| VLS | VP14Q575 VP14Q575 | E1 75 E1 120 | T1021NL |
| Siemens | PEB 2235, PEB 2235A1, PEB 2235B1 PEB 2235, PEB 2235A1, PEB 2235B1 PEB 2235, PEB 2235A1, PEB 2235B1 | T1 CEPT 75 CEPT 120 | T1075NL |

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 T1075NL 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 (10-11):(5-8) 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 (5-8):(11-9) for Rx on the T1075NL.

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 | | | |
| Transmit | 9 dB | 15 dB | 11 dB |
| Receive | 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:

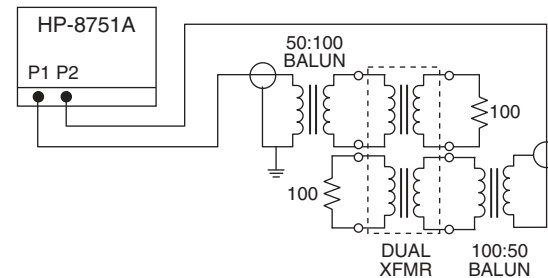
Metallic Voltage: 800 V peak, 10/560 μsec
Longitudinal Voltage: 2,400 V peak, 10/700 μsec

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 Re 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-6554NL | 1 : 1 : 1 : 1 | 24.0 | 15 | 0.20 | 0.30 | 500 | Through Hole |
| PE-6555NL | 1 : 1 : 1 : 1 | 8.0 | 10 | 0.20 | 0.25 | 500 | Through Hole |
| PE-6584NL | 1 : 1 : 1 : 1 | 47.0 | 16 | 0.20 | 0.30 | 500 | Surface Mount |
| PE-6587NL | 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.

For More Information:

Pulse Worldwide Headquarters

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

www.pulseeng.com

Tel: 858 674 8100
Fax: 858 674 8262

Pulse Europe

Einsteinstrasse 1
D-71083 Herrenberg
Germany

Tel: 49 7032 7806 0
Fax: 49 7032 7806 135

Pulse China Headquarters

B402, Shenzhen Academy of
Aerospace Technology Bldg.
10th Kejinan Rd.
High-Tech Zone
Nanshan District
Shenzhen, PR China 518057

Tel: 86 755 33966678
Fax: 86 755 33966700

Pulse North China

Room 2704/2705
Super Ocean Finance Ctr.
2067 Yan An Rd. West
Shanghai 200336
China

Tel: 86 21 62787060
Fax: 86 2162786973

Pulse South Asia

135 Joo Seng Rd.
#03-02
PM Industrial Bldg.
Singapore 368363

Tel: 65 6287 8998
Fax: 65 6287 8998

Pulse North Asia

3F, No. 198
Zhongyuan Rd.
Zhongli City
Taoyuan County 320
Taiwan R. O. C.

Tel: 886 3 4356768
Fax: FRE 886 3 43568 20
Pulse: 886 3 4356823

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