

# **T1/CEPT/ISDN-PRI TRANSFORMER**

## **Quad Port SMT Transformer Module with IC Side Protection**



# Pulse

A TECHNITROL COMPANY



- Eight transformers in a low profile surface mount package
- Includes IC Side Protection Circuit on each channel to suppress low voltage transients
- Compatible with PMC-Sierra's Comet chip (PM4354)
- Patented "Interlock Base" construction for high reliability
- IC grade transfer-molded package withstands 235°C IR reflow
- Minimum Isolation voltage: 1500 Vrms
- UL 1950 recognized

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

Part Number	Turns Ratio (Pri:Sec ±5%)		OCL (mH MIN)	Cw/w (pF MAX)	LL (µH MAX)	Package/ Schematic
	TX	RX				
T9021	1:2.42	1:2.42	0.6 & 0.6	35 & 35	.60 & .60	QTERA

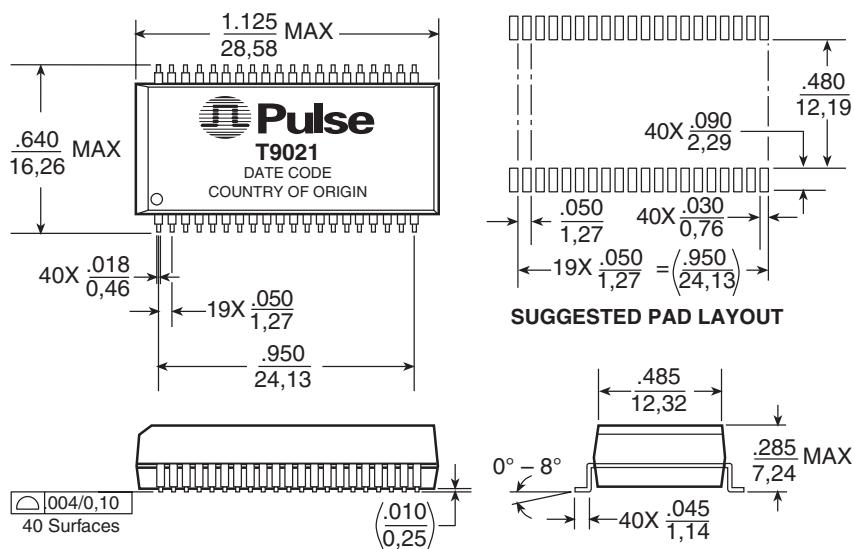
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**NOTE:** TX = Transmit channel. RX = Receive channel

## Mechanical

## Schematic

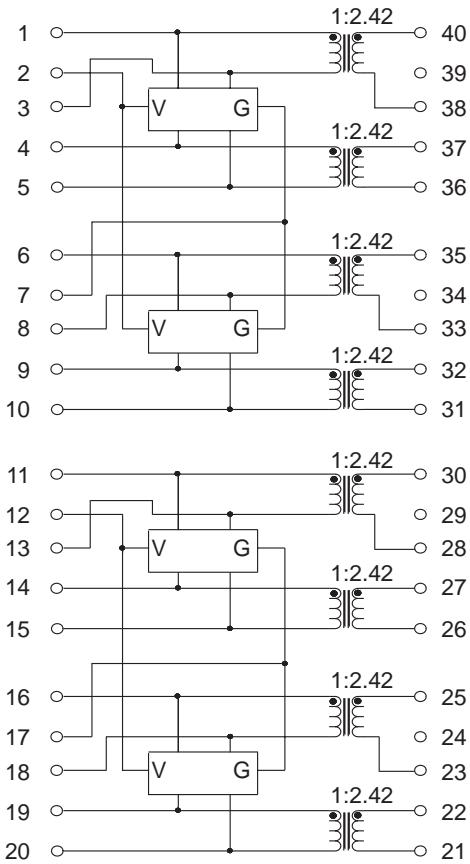
QTERA



**Weight** ..... 5.0 grams  
**Tape & Reel** ..... 250/reel  
**Tube** ..... 15/tube

Dimensions: Inches  
mm

Unless otherwise specified, all tolerances are  $\pm \frac{.010}{.025}$



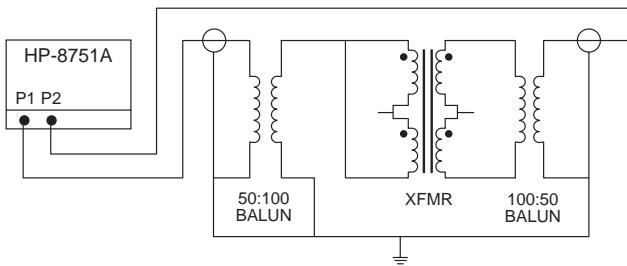
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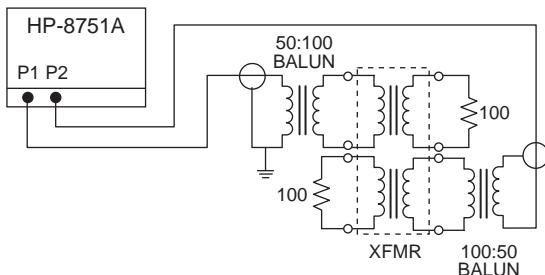


### Application Notes

- ET Product** — All coils have an ET product of 10 V- $\mu$ sec 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 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.



- 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
REC	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 system designs include the proper voltage and current suppression devices:

Metallic Voltage: 800 V peak, 10/560  $\mu$ sec  
 Longitudinal Voltage: 2,400 V peak, 10/700  $\mu$ sec

- Isolation Voltage** — 100% of transformers are tested during production to the specified isolation voltage level.

- General Information** — The T9021 is 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.

### For More Information :

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