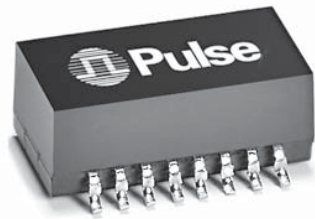


GIGABIT DUAL TRANSFORMERS

For Use with 150 Ω Twinax Cable



- Compliant with ANSI X3T9.5, FC-PH-3 Fibre Channel Physical Layer Specification
- Compliant with IEEE 802.3z PMD
- Designed for fast rise-time and a low frequency cutoff of 2.5 MHz
- IC grade transfer-molded package withstand 245°C peak temperature profile

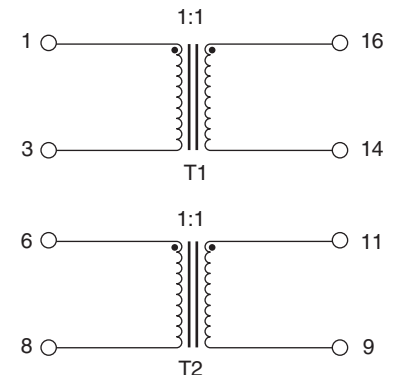
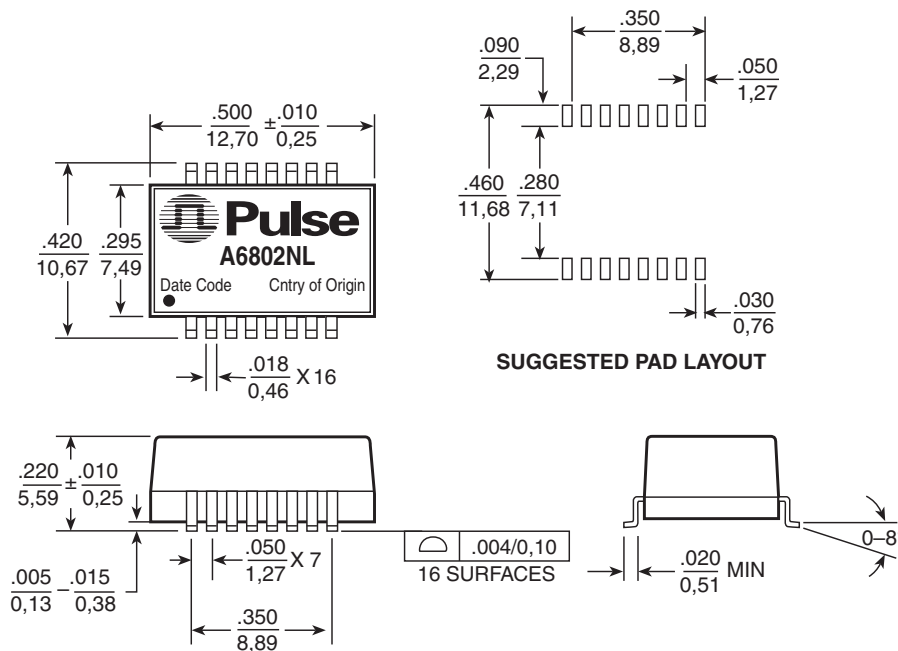
Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

Part Number	Turns Ratio ($\pm 6\%$)	Primary Inductance OCL (μH MIN) (@ 20 mVRMS, 100 kHz)	DCR (Ω MAX)	Hi-Pot (VRMS)	Rise Time (ps MAX) 20-80%	Low Frequency Cutoffw (-3 dB)
A6802NL	1:1	5.50	0.21	1500	280	≤ 2.5 MHz

Mechanical

Schematics

A6802NL



Dimensions: Inches
mm
Unless otherwise specified, all tolerances are $\pm .005$
0,13

Weight 1.4 grams
Tape & Reel 500/reel
Tube 45/tube

NOTE: For lower speed Fibre Channel applications, please refer to application note on data sheet A101.

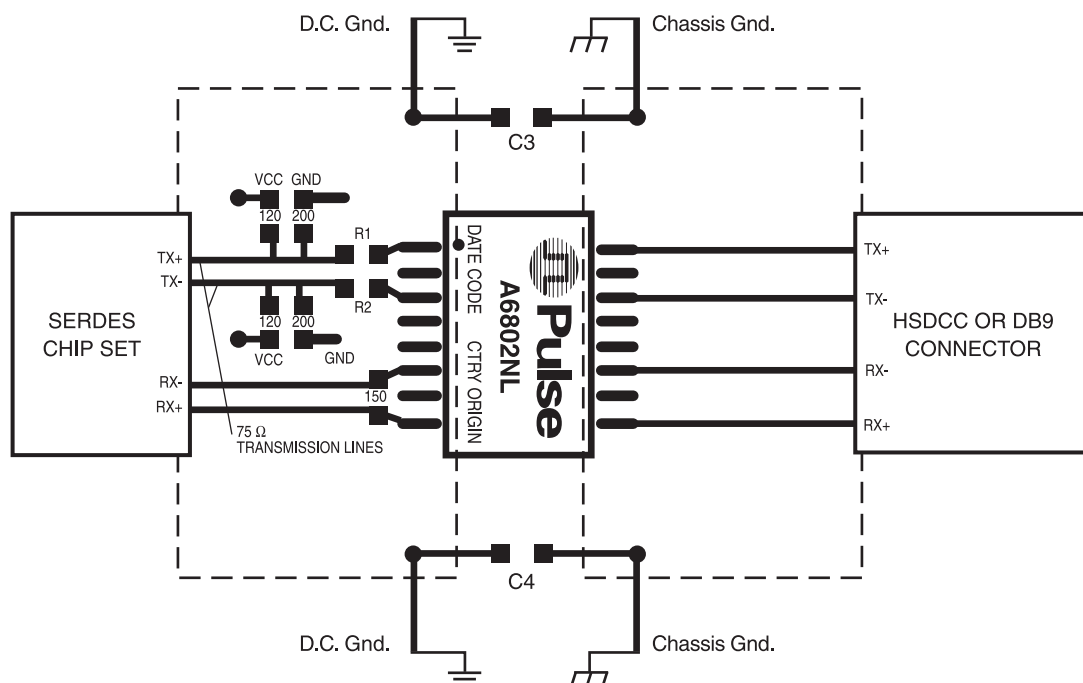
USA 858 674 8100 • Germany 49 7032 7806 0 • Singapore 65 6287 8998 • Shanghai 86 21 32181071 • China 86 755 33966678 • Taiwan 886 3 4643715

For Use with 150 Ω Twinax Cable

Application Notes:

Pulse has designed Gigabit Dual Transformers specifically for point to point coupling to 150 Ω Twinax cable. The isolation transformers protect the station from static charges that may develop on the cable and prevent ground loop currents from being transferred between stations. The devices have also been designed to provide common mode rejection within the transmission band and thus reduce EMI. The bandwidth of

these devices minimizes data dependent jitter by providing fast signal rise times. The dual package allows connection of both the transmit and receive channels as shown in the application circuit below. Surface mount packaging also allows a cost-effective solution. The transformers are available in either tubes or Tape & Reel packaging.



1. R1 and R2 values should be based upon the transmit amplitude required for the system. Placing a short ($0\ \Omega$) will result in maximum amplitude. However, doing so will result in distortion on the output due to impedance mismatch. For optimum design, R1 and R2 should be approximately $68\ \Omega$ for each leg. This will result in a -6.0 dB insertion loss (transmitter section). If this is too much insertion loss, then at least a $15\ \Omega$ for R1 and R2 is recommended.
2. When designing PCB layout, transmission line methods must be utilized to maintain return loss and signal integrity. Transformer should be located within 1" of cable connector.
3. $tr_{transformer} = \sqrt{[(tr_{out})^2 - (tr_{in})^2]}$
4. The typical application circuit shown above is a suggested layout. Actual board layout may vary based upon individual applications and EMC concerns.

NOTE:

These gigabit dual transformers are packaged in tubes unless Tape & Reel is specified. When ordering, add the suffix "T" (i.e. A6801NLT) for "Tape & Reel" packaging in increments of 500.

Insertion Loss of Transmitter:

$$R_{eq} = R_1 + R_2 \text{ and } Z_o = 150 \, \Omega$$

$$\text{Insertion Loss} = 20 \log [Z_0 / R_{eq} + Z_0]$$

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