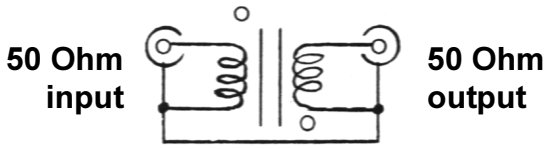
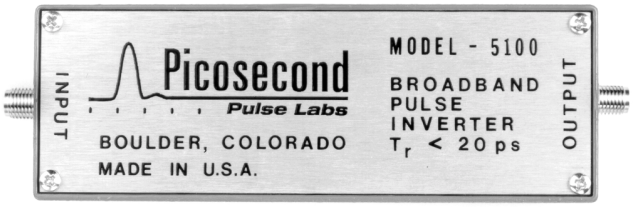
# Model 5100
## Inverting Transformer

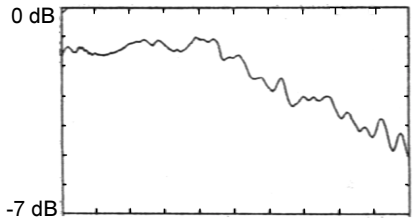
### 15 ps Risetime



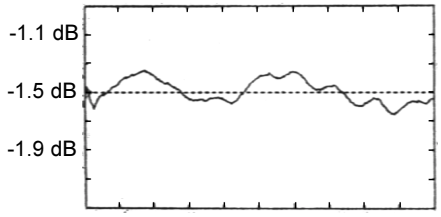




The Model 5100 Inverting Transformer is probably the world's fastest pulse inverting transformer. Its risetime is 15 ps with a -3 dB bandwidth from 200 kHz to 23 GHz. It passes fast risetime pulses with a minimum of waveform distortion. A flat top pulse passing through the inverter has less than 2% sag in 15 ns. The 5100 can also be used for RF and microwave applications. See Notes [1-3].

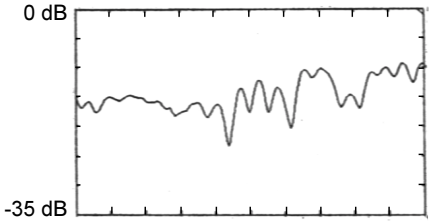
| | | | |
|---|---|---|---|
| **Risetime** (10%-90%) | 15 ps typical, 20 ps max. | **Sag Time Constant** | 800 ns (1/e) |
| **Bandwidth** (-3 dB) | >20 GHz, typical | **Core Saturation** | -50% @ 500 mA DC |
| **Low Frequency Cutoff** | 200 kHz (-3 dB) | **Inductance** | 20 µH |
| **Insertion Loss** | 1.5 dB, ±0.5 dB<br>0.01 < f < 4 GHz | **Max. Power** | 10 W average |
| **Impedance** | 50 Ω | **Turns Ratio** | 1:1 |
| **Refl. Coeff.** (35 ps TDR) | -15% rho | **Connectors** | SMA jacks (f) |
| **Return Loss**<br>(f < 6 GHz) | 16 dB, typical<br>>12 dB min. | **Weight** | 5 oz. |
| **Delay** | 0.6 ns | **Dimensions** | 4.8" x 1.5" x 1.1"<br>(12.2 x 3.8 x 2.8 cm) |
| **Warranty** | One year. See Terms and Conditions of Sale for details | | |




**1 dB/div and 2 GHz/div**
Insertion Loss



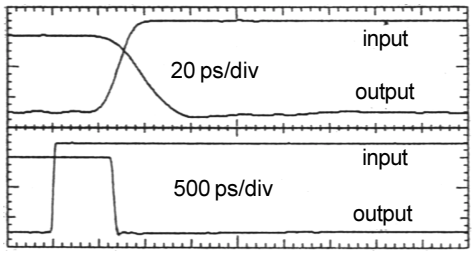

**0.01-2 GHz 0.2 dB/div and 200 MHz/div**
Mid-Band Insertion Loss



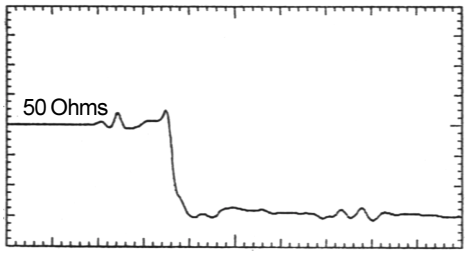

**5 dB/div and 2 GHz/div**
Return Loss

### Ordering Information

| Model Number |
|---|
| 5100-100 |




**20 ps/div and 500 ps/div**
Transmission response
to 10 ps risetime input step




**5% rho/div and 100 ps/div**
35 ps TDR

**Notes**

**[1]** Parameters listed are typical values. Guaranteed only when max/min limits are given. **[2]** 10 ps risetime step response and TDR waveform measured using a PSPL Model 4015B pulse generator and an HP-54124A 50 GHz, 9.4 ps digital sampling oscilloscope. **[3]** Frequency response measured using a Wiltron 5447A 10 MHz - 20 GHz network analyzer.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