

- Provides a fast-rise pulse
- Simplifies oscilloscope adjustment

## Tunnel Diode Pulser

### Technical Data

The TEGAM Tunnel Diode Pulser provides a clean, fast-rise pulse for adjusting the transient response of high frequency oscilloscopes up to 1 GHz bandwidth. The Tunnel Diode Pulser (TDP) may be driven directly by a 60-100 volt square wave.

### Operating Instructions

The TDP provides a fast-rise pulse for checking and adjusting the transient response of oscilloscopes and amplifiers of up to 1.0 GHz bandwidth.

Always set the TUNNEL DIODE TRIGGERED LEVEL control to the minimum which will provide a fast-rise output of the 250 mV output which suddenly appears upon increase of the TUNNEL DIODE TRIGGERED LEVEL control above the minimum necessary will cause the step deviation from the ideal by as much as 5%.

The TDP can be terminated with a 50 ohm termination resistor (such as the Tektronix 011-0049-01 termination) when testing oscilloscopes with a 1 Megohm input impedance. When testing an oscilloscope with a 50 ohm input impedance, connect the TDP directly to the oscilloscope input or alternatively

through an attenuating pad such as the Tektronix 011-0069-02 (x2 with BNC connectors). Such an attenuator will improve the reverse termination of the pulse and thus improve system transient response. In general, such an

attenuator is necessary to assure clean response in systems exceeding 200 MHz bandwidth. Additional attenuators may be used to further reduce the signal amplitude without seriously degrading the pulser's performance.

#### INPUT DRIVE SIGNAL REQUIRED

Amplitude	60-100 volt square wave capable of supplying at least 11 mA
Minimum Frequency	100 Hz
Maximum Frequency	100 kHz

#### OUTPUT SIGNAL INTO 50Ω

Amplitude	Approximately 250 mV peak-to-peak
Risetime	≤125 ps
Typical Aberration*	<1% in a 1 GHz (350 ps) system <4% including <8% peak-to-peak ring at 5 GHz in an 11.5 GHz (30 ps) system
Output Impedance	50Ω ±6% at dc when Tunnel Diode is in high state

\*See graph below for typical low frequency deviation from an ideal step

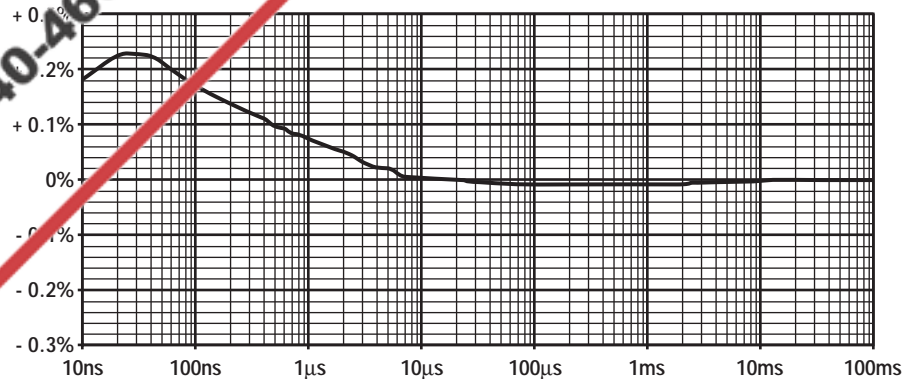


Figure 1. Typical Tunnel Diode Pulser deviation from an ideal step vs. time



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## Warranty

One year on materials and workmanship.

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## Calibration Documentation

Contact TEGAM for OPTION Z540 NIST Traceable Compliance Certificate and Test Data.

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## Calibration & Technical Services

For warranty and remedial repair, calibration services and spare parts, or for additional information on TEGAM sales and service offices around the world, contact us at 440-466-6100 (ph) or 440-466-6110 (fx).

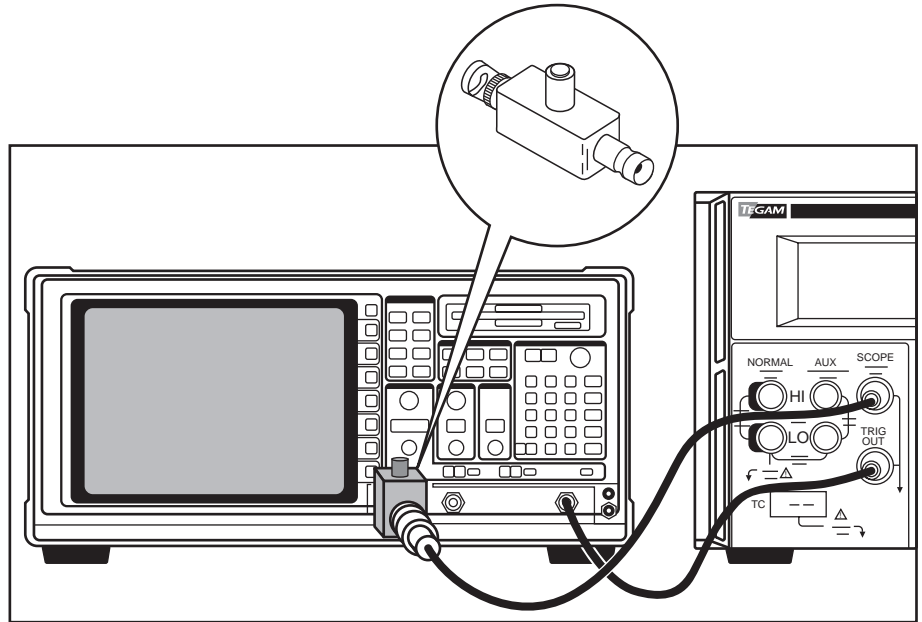


Figure 2. Tunnel Diode Pulser Connections



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