

Features

- Laser current up to 400 mA, 700 mA with heat sinking
- Optical pulse widths from 100 picoseconds to 50 microseconds
- Connects directly to floating anode Type-1 butterfly-packaged laser diodes through pin sockets; compatible with other laser packages
- Laser drive follows electrical input
- Highly stable constant-current laser drive
- Laser current and bias are settable with onboard trim pots or by external analog inputs
- Switchable TTL or LVDS/PECL/CML input trigger compatibility
- Powered by standard 5-volt micro-USB power supply or through ribbon cable interface connector
- Compact 2" x 2" PCB for embedded application



The T160 Laser Driver features laser drive pulse widths down to 300 picoseconds FWHM and ensures sharp turnoff and minimal optical tails. The signal path is essentially DC coupled, but duty cycle is limited to 60% and laser ON time is limited to 50 microseconds. It is suited to applications in pumped-fiber lasers, fluorescent decay analysis, LIDAR, and laser-based materials processing. The 2" by 2" design connects directly to standard 0.1" pin-pitch butterfly laser packages, making it ideal for OEM use in laser systems.

The T160 offers easily adjustable current and bias settings. It is compatible with several Highland Technology digital delay and pulse generators including:

- P400 benchtop digital delay and pulse generator
- T560 compact digital delay and pulse generator
- T240 picosecond pulse generator

For a laser drive with a built-in pulse generator, see the T165 Laser Pulser.

Specifications : T160 picosecond-nanosecond laser diode driver

FUNCTION	Embedded laser diode driver
LOGIC INPUT	Switchable TTL or optional LVDS/PECL/CML input TTL threshold is +0.4 volts, 50 Ω load Differential input is LVDS or 3.3 volt PECL, 100 Ω load Laser current follows logic input
PROPAGATION DELAY	1 ns nominal
LASER OUTPUT	User adjustable 0 to 700 mA, 2.5 volt compliance Cooling required above 400 mA Limited to 60% duty cycle and 50 μ S max ON time
RISE/FALL TIMES	150 ps to 1 ns nominal (-2 and -9 versions) 2.5 ns nominal (-14 version) Actual rise/fall times depend on laser electrical parasitics
JITTER	< 10 ps RMS (-2 and -9 versions) < 15 ps RMS (-14 and -15 versions)
CONTROL	Two trimpots or external analog inputs set laser ON current and laser OFF bias External inputs are 0 to +3 volts, > 10 K load
BIAS RANGE	< 50 mV to +1.5 V , nominal, laser anode relative to ground
POWER	+5 volts via USB connector or ribbon header Current draw: 200 mA plus laser current Highland model J6 USB power supply available for use in trimpot mode up to 700 mA laser current
CONNECTORS	TTL input: SMB connector LVDS/PECL, control, power: 10-pin 50-mil 2x5 ribbon cable header MONITOR output: SMB connector Micro-B USB alternate power connector 3-pin header provides access to laser TEC pins
LED INDICATORS	Green POWER
PACKAGING	2" x 2" printed circuit board