

## Precision Pulse Control

The PCO-7125 is a compact and economical OEM pulsed-current laser diode driver module. It is designed to provide extremely fast high-current pulses for driving laser diodes in range finder, LIDAR, atmospheric communications and other applications requiring high-current nanosecond pulses. This module offers variable output current from 500 mA to 5000 mA with pulse widths from 30 ns to 1  $\mu$ s at frequencies up to 865 kHz.

## Laser Diode Connection

Mounting pads are provided to mount the laser diode directly to the driver. The four-hole mounting pattern accepts TO-18, TO-5, TO-52, 5.6 mm, and 9 mm packages.

To facilitate various packages and mounting preferences, two solder pads at the end of the board accept various laser diode packages mounted on-axis to the driver. Alternately, low-inductance strip line cable can be used to connect the board to a remotely-located diode.

## System Operation

The DC high voltage and +12 VDC power supplies are connected via J1, a six-pin male header connector, using the supplied control cable. Pulse current depends on HV supply voltage over the range of 0 V to +200 V (maximum). Externally-generated pulses are fed to the gate input via J1. The width and repetition rate of the gate pulses directly set the timing of the output pulses.

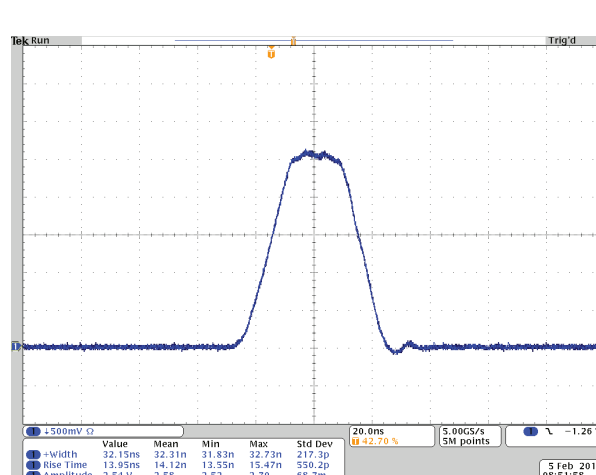
A current monitor output is provided to observe the diode current in real time with an oscilloscope.

Four mounting holes are provided.

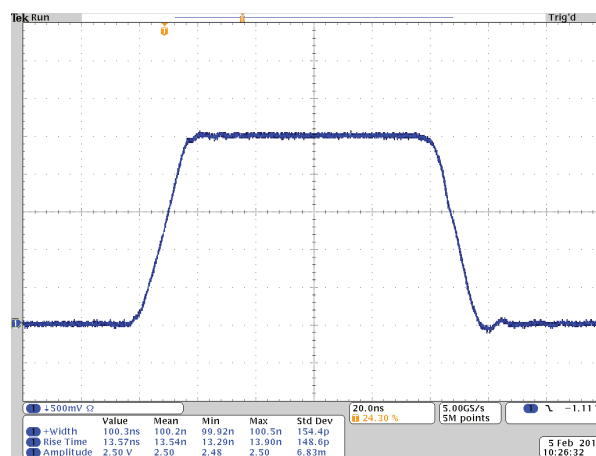
## Ordering Information

PCO-7125  
Included Control Cable  
Optional Current Monitor Cable

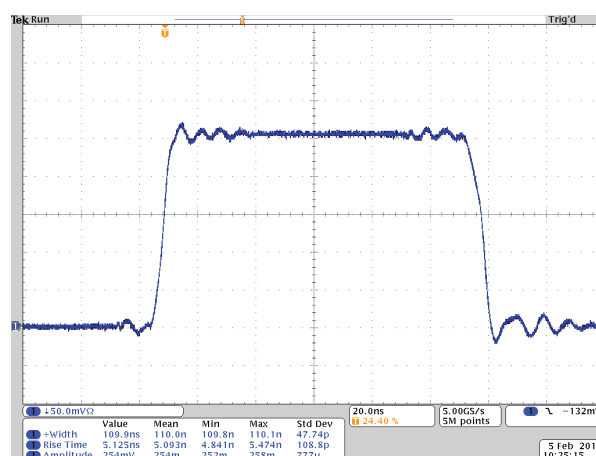
Module  
PCA-7000  
PCA-9245



PCO-7125 (5000 mA, 32 ns, shorted load, inverted waveform)



PCO-7125 (5000 mA, 100 ns, shorted load, inverted waveform)



PCO-7125 (500 mA, 100 ns, shorted load, inverted waveform)

## Pulse Amplitude

Output current range	500 mA to 5000 mA
Pulse width	30 ns to 1000 ns
Rise time and Fall time	$\leq 17$ ns * <sup>2</sup>
Frequency	Single shot to 865 kHz
Throughput delay	54 ns typical
Housekeeping power required	12 V $\pm$ 250 mV, 80 mA
Maximum high voltage input	200 V DC, 100 mA, $\leq 25$ W * <sup>1</sup>
Compliance voltage	5 V

## Gate

Gate input	+5 V
Gate pulse width	30 ns to 1000 ns
Termination impedance	50 $\Omega$
Gate Connector	J1 Pin 2

## Input connector

Gate input	J1 Pin 2
+12 VDC input	J1 Pin 4
High voltage input	J1 Pin 6
Return	J1 Pins 1, 3, 5

## Current monitor

Current monitor scaling	2 A/V typical
Current monitor output impedance	50 $\Omega$
Current monitor connector	J2 (SMB)

## Output connection

Four-hole mounting pattern accepts TO-18, TO-5, TO-52, 5.6 mm, and 9 mm packages

## General

Size (LxWxH)	63.6 mm x 38.2 mm x 14.2 mm
Weight (approximate)	15 g
Mounting hole spacing	54.55 mm x 30.8 mm
Hole diameter	3.25 mm

Operating Temperature	0 °C to 35 °C
Cooling	Air cooled

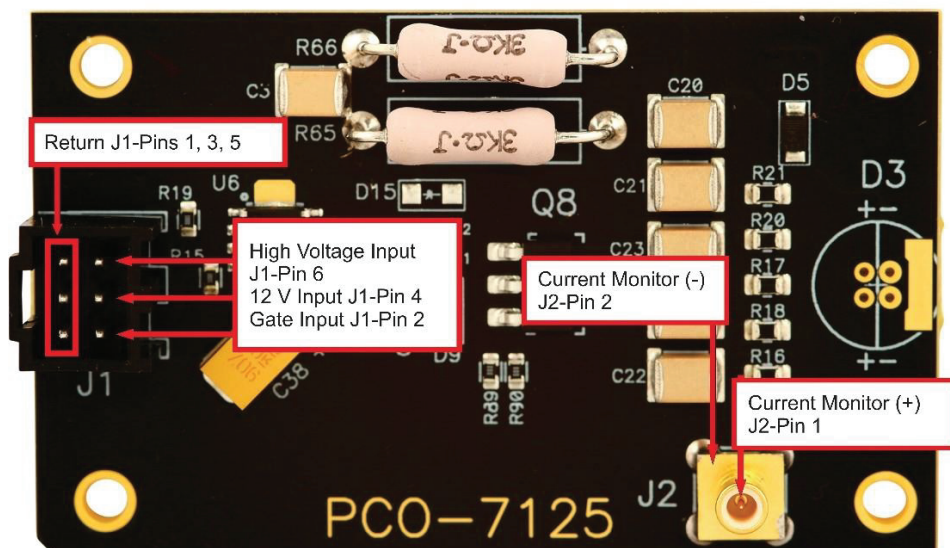
## Notes

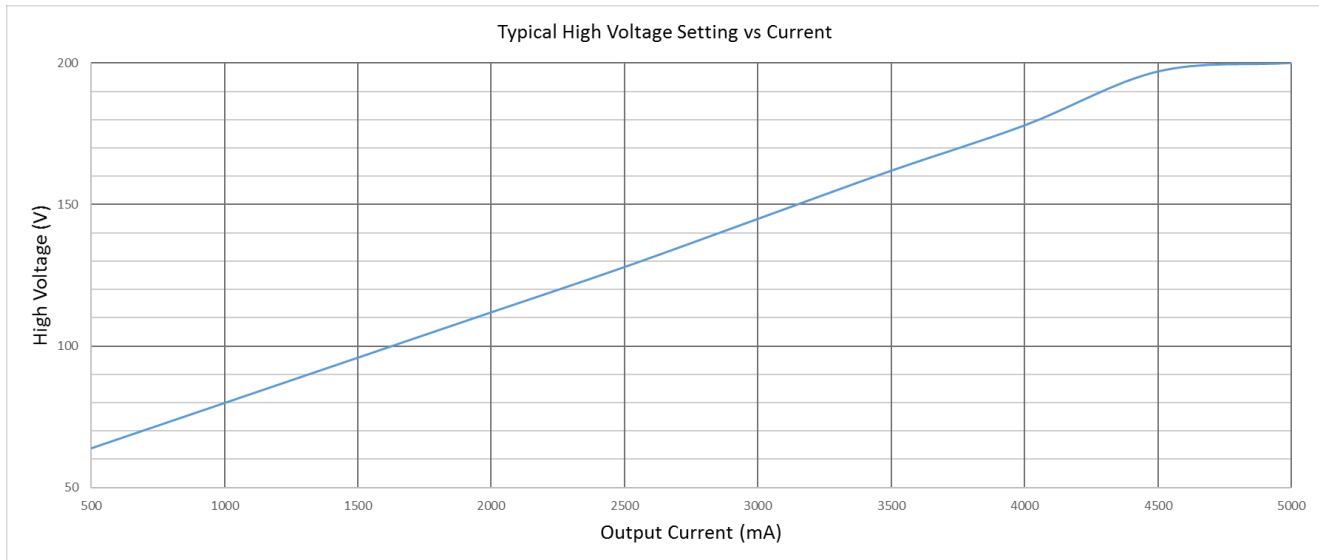
\*1 Driving a shorted load at maximum SOA level.

\*2 For output currents above 500 mA.

All specifications are measured after the module is thermally stabilized (15 minutes), driving a shorted load and using the current monitor connection.

Specifications are subject to change without notice.





**CAUTION:**  
Permanent damage will occur if the instrument is operated above the appropriate SOA line in the graph below.

