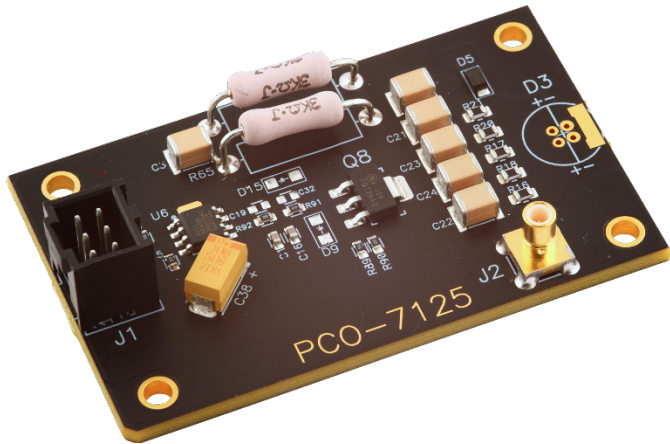


PCO-7125 Laser Diode Driver Module — Datasheet



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 μ 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

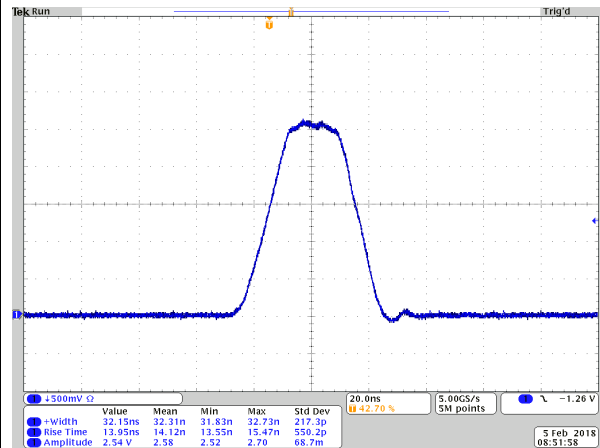
Included Control Cable

Optional Current Monitor Cable

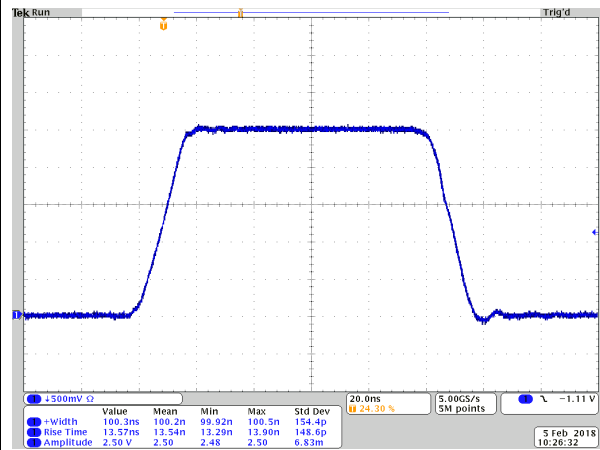
Module

PCA-7000

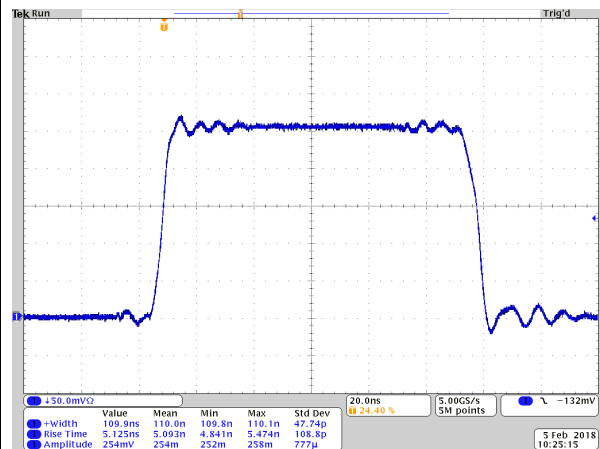
PCA-9245



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	≤ 17 ns *2
Frequency	Single shot to 865 kHz
Throughput delay	54 ns typical
Housekeeping power required	12 V ± 250 mV, 80 mA
Maximum high voltage input	200 V DC, 100 mA, ≤ 25 W *1
Compliance voltage	5 V

Gate

Gate input	+5 V
Gate pulse width	30 ns to 1000 ns
Termination impedance	50 Ω
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 Ω
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

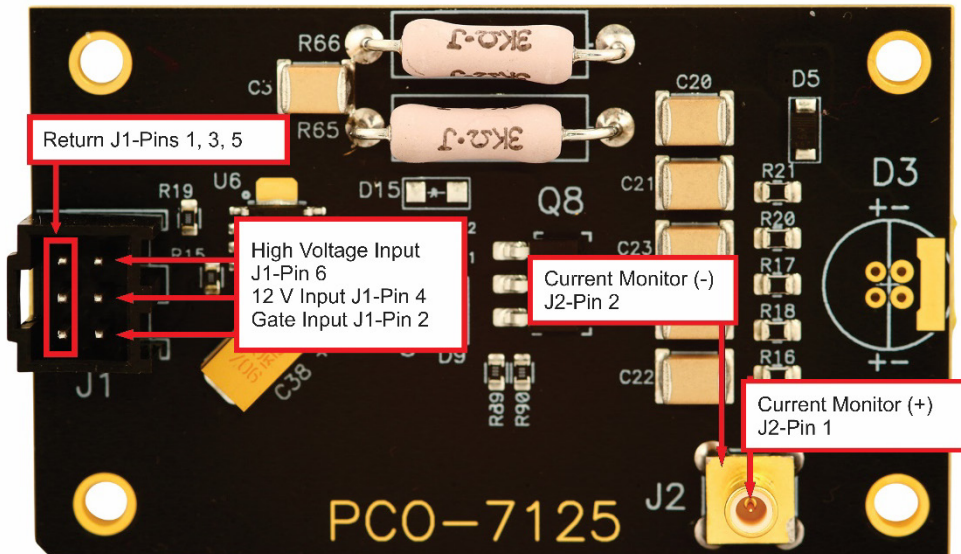
Notes

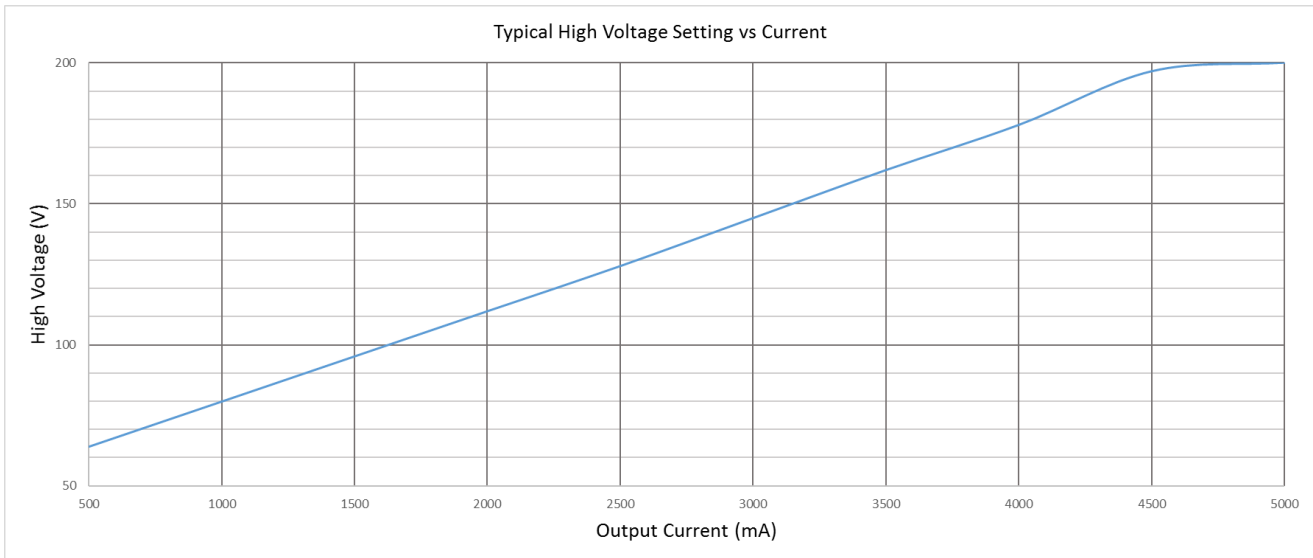
- *1 Driving a shorted load at maximum SOA level.
- *2 For output currents above 500 mA.

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.

Warranty: One year parts and labor on defects in materials and workmanship.





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

