



Precision Pulse Control

The PCO-7111 series consists of multiple compact pulsed laser diode driver modules. The modules are designed to provide extremely fast high-current pulses for driving laser diodes in range finder, LIDAR, atmospheric communications and other applications requiring highcurrent nanosecond pulses.

The PCO-7111 has a fixed pulse width typically 5 ns - 10 ns.

Laser Diode Connection

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

To facilitate additional packages and mounting preferences, two solder pads are provided at the end of the board for laser diodes mounted on-axis to the driver. Alternately, low-inductance stripline cable can be soldered to the pads and connected to a remotely-located diode.

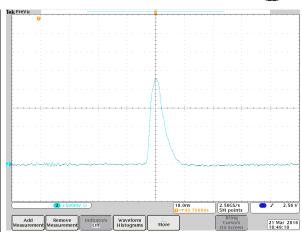
System Operation

Output current is controlled with the voltage at the highvoltage input. The frequency is controlled via gate pulses at the trigger input.

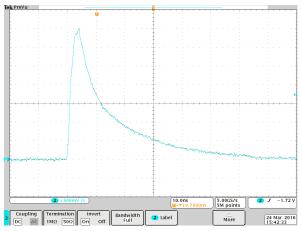
A current monitor output is provided to observe the diode current in real time with an oscilloscope.

Ordering Information

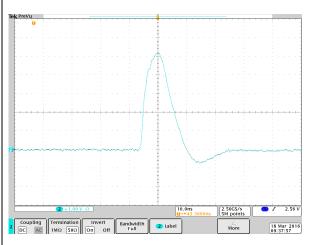
PCO-7111-40-5 PCO-7111-50-10 PCO-7111-100-10 PCA-9190 PCA-9140 40 A, 5 ns 50 A, 10 ns 100 A, 10 ns Control Cable Optional Current Monitor Cable



PCO-7111-40-5 (45.8 A, 5.04 ns, shorted load, inverted waveform)



PCO-7111-50-10 (64.9 A, 9.25 ns, shorted load, inverted waveform)



PCO-7111-100-10 (103.5 A, 10.2 ns, shorted load, inverted waveform)

PCO-7111 Series

Laser Diode Driver Module — Datasheet



PCO-7111-40-5

Output current range Pulse width (at max. output current) Rise time Frequency Jitter Throughput delay Housekeeping power required Maximum high voltage input

PCO-7111-50-10

Output current range Pulse width (at max. output current) Rise time Frequency Jitter Throughput delay Housekeeping power required Maximum high voltage input

PCO-7111-100-10

Output current range Pulse width (at max. output current) Rise time Frequency Jitter Throughput delay Housekeeping power required Maximum high voltage input

Trigger

Trigger input Trigger pulse width Termination impedance 4 A to 40 A 5 ns ±2 ns 2 ns ±1 ns Single shot to 50 kHz 1 ns 44 ns typical 15 V ± 250 mV DC, 10 mA 195 V DC. 25 mA. 5 W

5 A to 50 A <10 ns ≤3.5 ns Single shot to 11 kHz ≤1 ns 43 ns typical 15 V ± 250 mV DC, 5 mA 195 V DC, 40 mA, 8 W

10 A to 100 A 10 ns +2 ns 3 ns ±1 ns Single shot to 5 kHz 1 ns 42 ns typical 15 V ± 250 mV DC, 1 mA 450 V DC, 10 mA, 4 W

+5 V 50 ns to 100 ns 50 Ω

Input connector

15 V input Gate input High voltage input Common Returns

Current monitor

Current monitor scaling Current monitor termination Current monitor + Current monitor -

20 A/V typical 50 Ω J2 Pin 1 J2 Pin 3

J1 Pin 2

J1 Pin 4

J1 Pin 10

J1 Pins 1. 3. 5

Output connector

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

General

Size (L x W x H)

6.22 cm x 2.54 cm x 0.75 cm 10 g Weight (approximate) Operating Temperature 0 °Č to 50 °C Air cooled

Notes

Cooling

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

All specifications are measured driving a shorted load using the current monitor connection.

Specifications are subject to change without notice.

