PCO-7111 Series Laser Diode Driver Module — Datasheet

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 high-current 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.

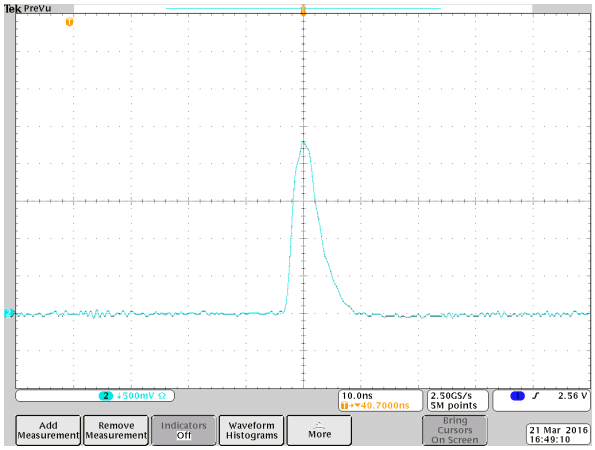
System Operation

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

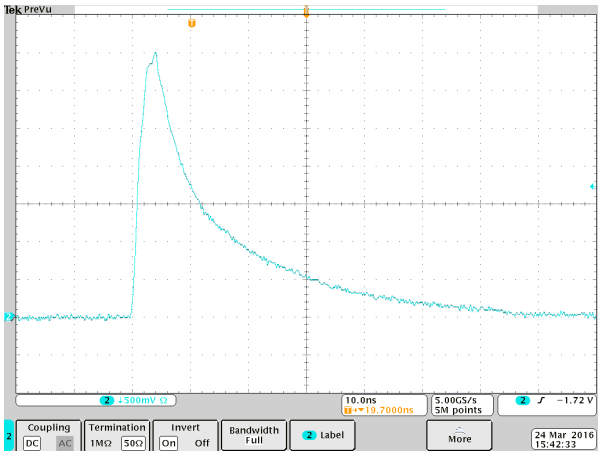
A current monitor output is provided to observe the diode current in real time with an oscilloscope.

Ordering Information

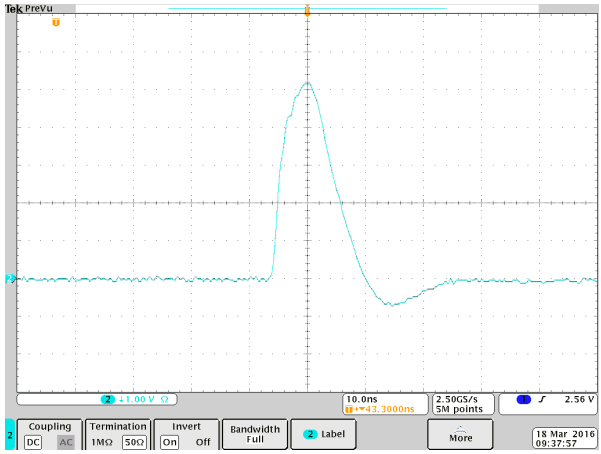
PCO-7111-40-5	40 A, 5 ns
PCO-7111-50-10	50 A, 10 ns
PCO-7111-100-10	100 A, 10 ns
PCA-9190	Control Cable
PCA-9140	Optional Current Monitor Cable



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)

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PCO-7111-40-5

Output current range	4 A to 40 A
Pulse width (at max. output current)	5 ns ±2 ns
Rise time	2 ns ±1 ns
Frequency	Single shot to 50 kHz
Jitter	1 ns
Throughput delay	44 ns typical
Housekeeping power required	15 V ± 250 mV DC, 10 mA
Maximum high voltage input	195 V DC, 25 mA, 5 W

PCO-7111-50-10

Output current range	5 A to 50 A
Pulse width (at max. output current)	<10 ns
Rise time	≤3.5 ns
Frequency	Single shot to 11 kHz
Jitter	≤1 ns
Throughput delay	43 ns typical
Housekeeping power required	15 V ± 250 mV DC, 5 mA
Maximum high voltage input	195 V DC, 40 mA, 8 W

PCO-7111-100-10

Output current range	10 A to 100 A
Pulse width (at max. output current)	10 ns ±2 ns
Rise time	3 ns ±1 ns
Frequency	Single shot to 5 kHz
Jitter	1 ns
Throughput delay	42 ns typical
Housekeeping power required	15 V ± 250 mV DC, 1 mA
Maximum high voltage input	450 V DC, 10 mA, 4 W

Trigger

Trigger input	+5 V
Trigger pulse width	50 ns to 100 ns
Termination impedance	50 Ω

Input connector

15 V input	J1 Pin 2
Gate input	J1 Pin 4
High voltage input	J1 Pin 10
Common Returns	J1 Pins 1, 3, 5

Current monitor

Current monitor scaling	20 A/V typical
Current monitor termination	50 Ω
Current monitor +	J2 Pin 1
Current monitor –	J2 Pin 3

Output connector

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

General

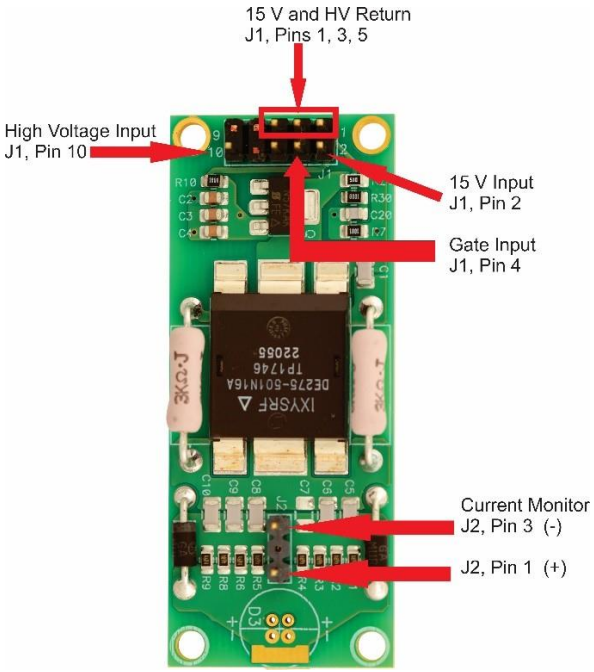
Size (L x W x H)	6.22 cm x 2.54 cm x 0.75 cm
Weight (approximate)	10 g
Operating Temperature	0 °C to 50 °C
Cooling	Air cooled

Notes

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.



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