



Precision Pulse Control

The PCO-7810-90-8 is a compact and economical pulsed OEM 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.

The PCO-7810-90-8 features an internal high voltage DC power supply to support the high current output, and an internal trigger generator. With the supplied heatsink, the PCO-7810-90-8 can operate at pulse repetition frequencies up to 200 kHz at ≤ 20 A output current (20 kHz at 90 A).

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 stripline cable can be used for connection to a remotely-located diode.

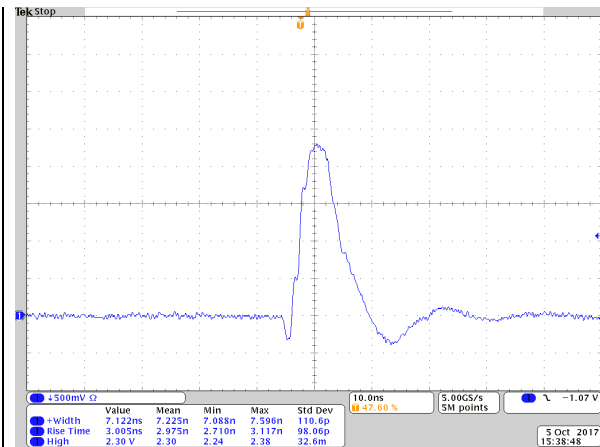
System Operation

Output current is controlled with the high voltage potentiometer. The frequency is controlled via a potentiometer on the PCO-7810-90-8.

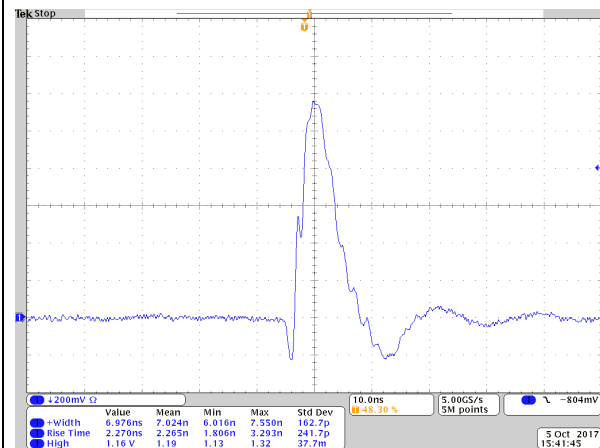
A current monitor output is provided to observe the diode current in real time with an oscilloscope.

Ordering Information

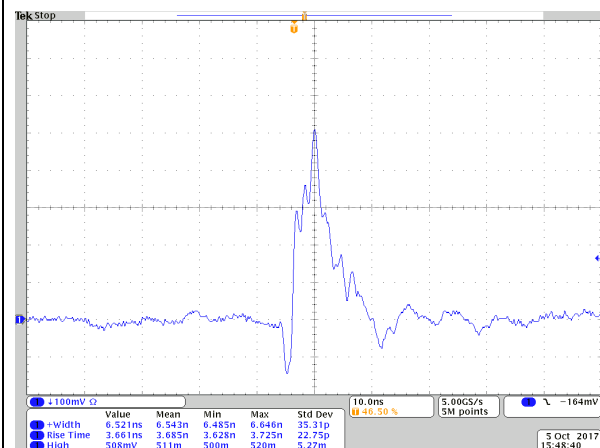
PCO-7810-90-8 90 A, 8 ns



PCO-7810-90-8 (90 A, 7.22 ns, shorted load, inverted waveform)



PCO-7810-90-8 (50 A, 7.02 ns, shorted load, inverted waveform)



PCO-7810-90-8 (20 A, 6.48 ns, shorted load, inverted waveform)

PCO-7810-90-8

Output current range	13 A to 90 A
Pulse width (at max. output current)	8 ns ±1 ns
Rise time	4.5 ns ±1 ns
Frequency	Single shot to 200 kHz
Jitter	1 ns
Throughput delay	33 ns typical
Housekeeping power required	+24 V ± 250 mV, 400 mA
Maximum high voltage	410 V DC

External Trigger Input

Trigger input	+5 V
Trigger pulse width	50 ns
Frequency	Single shot to 200 kHz
Termination impedance	50 Ω

Input DB-9 pin Connector

Common Return	Pin 6, 7, 8, 9
Gate input	Pin 1
Osc. Enable	Pin 2
HV Disable	Pin 3
+24 V input	Pin 4
No Connection	Pin 5

Current monitor

Current monitor scaling	40 A/V typical
Current monitor termination	50 Ω
Current monitor +	J1 Pin 1
Current monitor -	J1 Pin 3

Output connector

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

General

Size (LxWxH)	10.16 cm x 3.18 cm x 3.56 cm
Weight (approximate)	82 g

Operating Temperature	0 °C to 35 °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.

