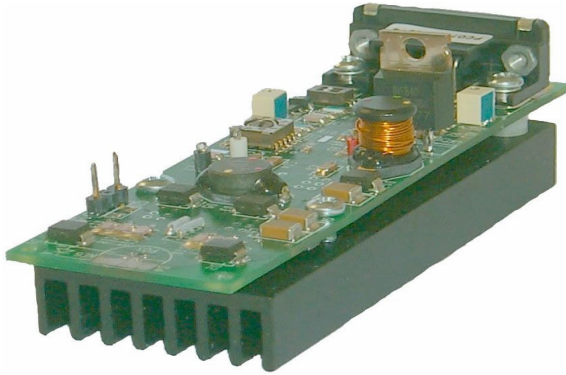


PCO-7810 FIXED PULSE WIDTH LASER DIODE DRIVER MODULE



- **Compact Economical Module**
- **Fully Self-Contained Internal High Voltage Power Supply & Trigger Generator**
- **4A to 50A Output**
- **Fixed 4nS or 12nS Pulse Width**
- **Repetition Frequency Single-Shot to 200kHz**
- **Onboard Oscillator 15Hz to 200kHz**
- **Pulsed Current Monitor Output**
- **Laser Diode May Be Mounted Directly On The PCO-7810**

The PCO-7810 is a compact, economical OEM laser diode driver module designed to provide extremely fast, high current pulses to drive laser diodes in range finder, LIDAR, atmospheric communications and other applications requiring high current, nanosecond pulses.

The PCO-7810 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-7810-40-4 can operate at pulse repetition frequencies up to 200KHz at 40A output current.

Two standard models are offered in the PCO-7810 product line, providing pulse currents ranging from 4A to 50A, and pulse widths from 4 nanoseconds to 12 nanoseconds, at frequencies as high as 200KHz.

Mounting pads are provided to mount the laser diode directly to the driver, eliminating the need for interconnect cables or striplines. The four-hole mounting pattern accepts TO-18, TO-5, TO-52, 5.6MM, and 9MM packages (PerkinElmer Optoelectronics R, S, T and U

packages), as well as other packages of similar dimensions and lead spacing, mounted perpendicular to the driver circuit board. To facilitate different packages and mounting preferences, there are two solder pads on the end of the board to accept various laser diode packages mounted on axis to the driver. Furthermore, the diode can be connected remotely from the driver using a low-impedance stripline interconnection between the mounting pads and the leads of the laser diode.

A current monitor output may be viewed with an oscilloscope, providing a straight-forward means to observe the diode current waveform in real-time.

The PCO-7810 driver provides high-speed performance, a robust design, flexible mounting configurations and the ability to drive a wide range of laser diodes in a small package. These features provide the user with an economical OEM module with the flexibility to be readily designed into a wide range of products.

| SPECIFICATIONS (Test Conditions @ 25°C) | MODEL | |
|--|-------------------------|----------------|
| PCO-7810 MODEL | 40-4 | 50-12 |
| Pulse Output Current Range | 4A to 40A | 5A to 50A |
| Pulse Width (FWHM At Maximum Output Current) | 4nS \pm 1nS | 12nS \pm 1nS |
| Rise Time (10% to 90%) | <2nS | 2.5nS |
| Maximum PRF at Maximum Frequency | 200kHz* | 67kHz* |
| Onboard Oscillator Frequency Range (use external for extended range) | 15Hz to >200kHz | |
| Maximum Duty Cycle | 0.1% | |
| Jitter (1st Sigma) | <1nS | |
| Throughput Delay (from external trigger to output pulse) | 33nS Typical | |
| Maximum Overshoot at Maximum Current | 5% | |
| Output Current Monitor Into 50Ω | 40A/V | |
| Trigger In (Optional) (CMOS into 1KΩ) | 50nS to 100nS | |
| HV Boost Disable (High disables HV Power Supply) | CMOS into 1KΩ | |
| Oscillator Enable Input Normally High (force low to disable) | CMOS into 1KΩ | |
| Support Power | +24VDC | |
| MECHANICAL | | |
| Input Connector (+24VDC, HV Disable input and Ext. pulse Input) | DSUB 9 pin AMP 747250-4 | |
| Length | 4.00 in. (10.16cm) | |
| Width | 1.25in. (3.18cm) | |
| Height (including heat sink) | 2.9 oz. (82 grams) | |
| Operating Temperature | 0°C to 70°C | |
| <p><i>ALL SPECIFICATIONS MEASURED INTO A SHORTED OUTPUT WITH THE INTERNAL CURRENT MONITOR SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE LASER DIODE NOT INCLUDED *DERATE MAXIMUM FREQUENCY BY 15% AT TEMPERATURES ABOVE 60°C</i></p> | | |

