**Precision Pulse Control**
The PCO-7115-5-1 is a compact and economical pulsed-current OEM laser diode driver module with a current range of 0.5 A to 5 A with a fixed pulse width of 1 ns typical. It is designed to provide extremely fast current pulses for driving laser diodes in range finder, LIDAR (Light Imaging, Detection and Ranging), ADAS (Advanced Driver Assistance Systems), atmospheric communications and other applications requiring high-current nanosecond pulses.

**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 voltage at the high-voltage input. The output frequency is the same as the pulses fed to the trigger input.

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

**Ordering Information**

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
<th>Current</th>
<th>Pulse Width</th>
<th>Frequency</th>
<th>Load Type</th>
<th>Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCO-7115-5-1</td>
<td>5 A, 1 ns</td>
<td>5 A</td>
<td>1 ns</td>
<td>1 MHz</td>
<td>Shorted</td>
<td>Inverted</td>
</tr>
<tr>
<td>Included Control Cable</td>
<td>PCA-9190</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Optional Current Monitor Cable</td>
<td>PCA-9245</td>
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<td></td>
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<tr>
<td>Optional Micro Stripline Output Cable</td>
<td>1820-0030</td>
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</tr>
</tbody>
</table>

PCO-7115-5-1 (5.0 A, 0.933 ns, 1 MHz, shorted load, inverted current monitor)

PCO-7115-5-1 (2.5 A, 0.906 ns, 1 MHz, shorted load, inverted current monitor)

PCO-7115-5-1 (0.5 A, 1.067 ns, 1 MHz, shorted load, inverted current monitor)
PCO-7115-5-1 Output current range
  0.5 A to 5.0 A
Pulse width
  1 ns typical, 0.5 A to 5.0 A

Rise time
  1 ns ±1 ns
Frequency
  Single shot to 1 MHz
Throughput delay
  37 ns typical
Maximum high voltage input
  24 V ± 250 mV, 60 mA
Compliance voltage
  5 V

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

Input connector
Molex 10 position connector, 0901420010
24 V input
  J1 Pin 2
Trigger input
  J1 Pin 4
High voltage input
  J1 Pin 10
Comon returns
  J1 Pins 1, 3, 5

Current monitor
SMB connection, use 50 Ω impedance
Current monitor scaling
  2 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 (LxWxH)
  6.35 cm x 3.83 cm x 1.0 cm
(Height with the mating connector: 2.15 cm)
Weight
  15 g (approx.)
Operating Temperature
  0 °C to 40 °C
Cooling
  Air cooled

Notes
Warranty: One year parts and labor on defects in materials and workmanship.
All specifications were measured in a free-air environment with an ambient temperature of 25°C. Since resistors R1 and R2 create an unwanted worst-case heat source of about 3.7 W, we recommend air cooling the PC board with a minimum 17.66 CFM airflow source. The exhaust air should ideally be located behind R1 and R2 such that the hot airflow exits directly and does not traverse across the module. This additional cooling is especially recommended when operating above 3 A with a frequency of greater than 600 kHz and/or if this module is operated in a confined area where heat is likely to build up. In general, the user should allow a 15 minute warm-up period to obtain a more stable output. Stability can be greatly improved by adding an airflow cooling source as described above.

All electrical measurements were taken via the current monitor connection while driving a shorted load.

Specifications are subject to change without notice.