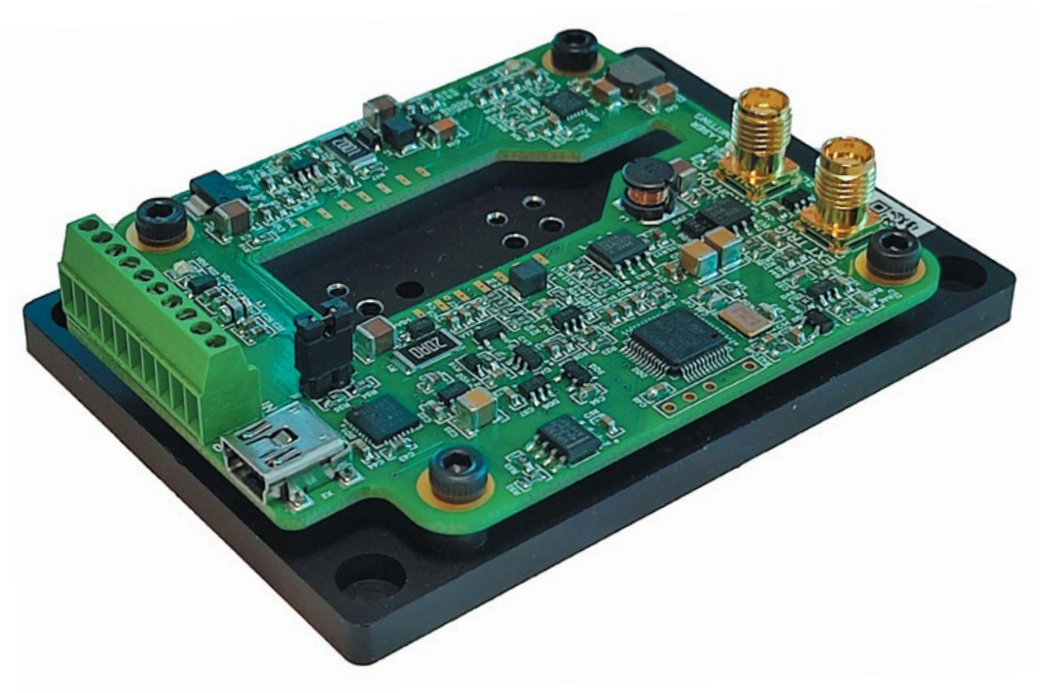


# PLD-NS-GSS-Tr

## PRE-SHAPING SHORT PULSE LASER DIODE DRIVER



### Key Features

- Special Design for 10/14 pin Butterfly Laser Diode
- Output Current up to 2000 mA
- Compliance voltage up to 3 V
- Adjustable pulse width 10–500 ns
- Repetition rate up to 1 MHz
- External trigger option
- Gain switch suppress option
- Pulse pre-shaping option
- USB, CAN interfaces
- On-Board TEC Controller
- 5VDC Input Power
- Completed by Heatsink
- Compact Size 85 mm × 60 mm × 21 mm

## Description

The PLD-NS-GSS-Tr is a compact short-pulse seed laser diode driver for powering 10/14-pin butterfly laser diode modules for applications, which require nanosecond pulse with long rise time. The pulse repetition frequency can be varied from 1 Hz to 1 MHz.

The driver circuitry requires a single 5VDC power source. All other needed voltages are generated on the board by high-frequency switching power supplies. The driver supplies a bidirectional proportional-integral-derivative (PID) thermo-electric cooler controller (TEC) with current capability of 1.5A and a voltage capability of 4V.

The main parameters of PLD-NS-GSS-Tr (pulse current, bias current, rise time, pulse width, repetition frequency, temperature set) are controlled by computer interface.

The PLD-NS-GSS-Tr provides control of the bias current and the pulse rise front slope, which allows both suppressing the gain switch and pre-shaping pulses for further amplification.

The PLD-NS-GSS-Tr has an external TTL-compatible input for repetition rate control from single shot up to 100 kHz.

The PLD-NS-GSS-Tr has an external output for synchronization with each current pulse. Driver has landing pads for soldering a butterfly laser diode directly into driver board and large heat sink for stable heat dissipation.

## Specifications

Parameter	Min.	Typ.	Max.	Units
<b>INPUT</b>				
Voltage	4.8	5.0	5.2	V
Current	-	-	2	A
External trigger (50 Ω)	3.3	-	5	V
<b>OUTPUT</b>				
Pulse Current	-	-	1000	mA
Compliance Voltage	1	-	3	V
Bias Current	-	-	150	mA
Pulse width *	10	-	500	ns
Pulse width step	-	0.2	-	ns
Repetition rate *	0.001	-	1000	kHz
Rise time **	8	-	100	ns
Fall time **	2	-	5	ns
TEC current	-1.5	-	1.5	A
TEC Voltage	1	-	4	V
TEC Temperature Set	15	25	50	°C
<b>TEMPERATURE</b>				
Operating	+10	-	+50	°C
Storage	-20	-	+70	°C
Humidity, Non-Condensing	-	-	95	%
<b>CONNECTIONS</b>				
Power and interface connector	Terminal block (1-282834-0 TE connectivity)			
USB	Mini-USB, Type B (1734035-1 TE connectivity)			
<b>MECHANICAL</b>				
Size	85 × 60 × 21 mm			
Weight, not more	160g			

\* Maximum duty cycle is limited to 2%

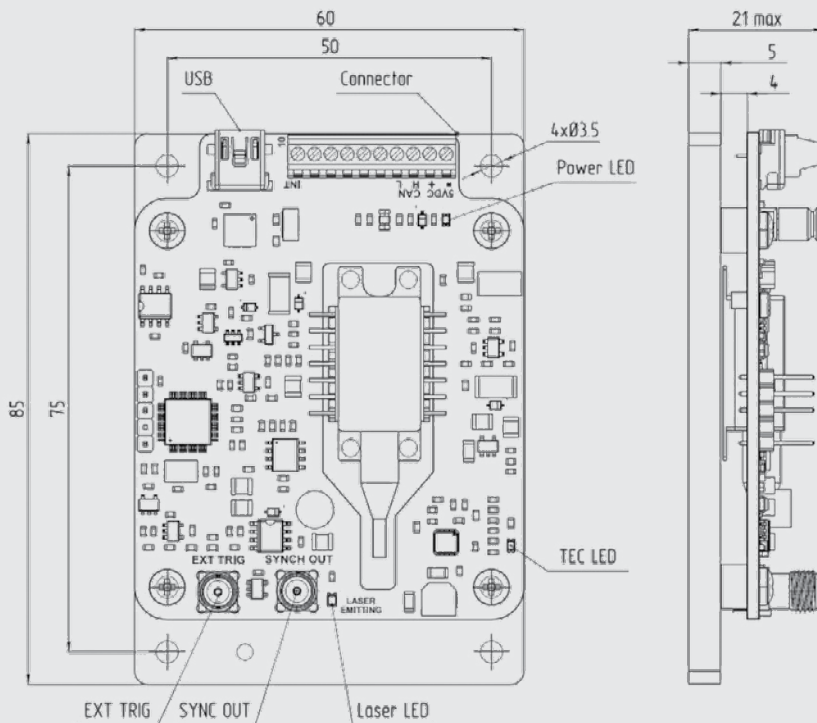
\*\* Controlled by user

\*\*\* Output performance depends upon laser diode characteristics

## Dimensions and Connections

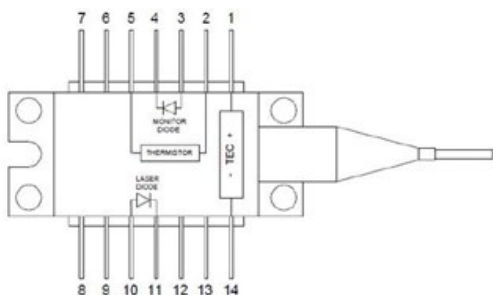
### Connector pinout

PIN	Function	Description
1	-5VDC	Device ground
2	+5VDC	Power input
3	CANH	CAN bus high
4	CANL	CAN bus low
5	NC	-
6	NC	-
7	NC	-
8	NC	-
9	GND	Device ground
10	INT	Interlock



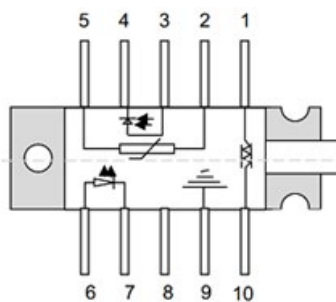
## Compatible Laser Pinout

### 14-pin Butterfly package



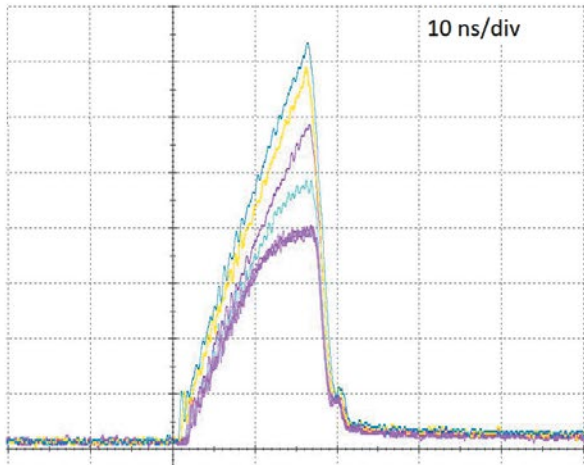
Nº	Description	Nº	Description
1	TEC Anode	8	n/c
2	Thermistor	9	n/c
3	Monitor PD Anode	10	LD Anode
4	Monitor PD Cathode	11	LD Cathode
5	Thermistor	12	n/c
6	n/c	13	n/c
7	n/c	14	TEC Cathode

### 10-pin Butterfly package

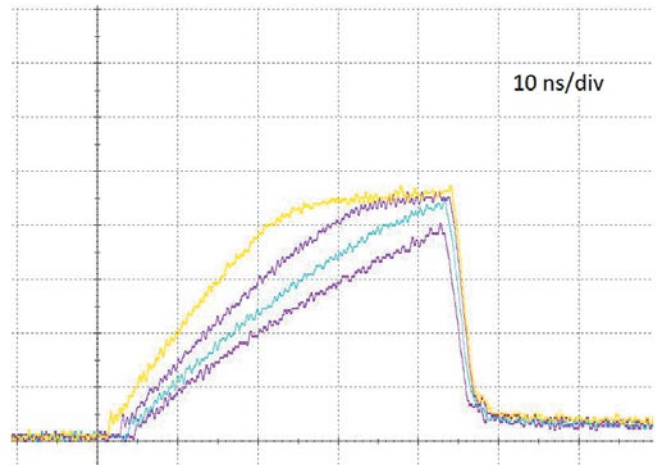


Nº	Description	Nº	Description
1	TEC (+)	6	Laser anode (+)
2	Thermistor	7	Laser cathode (-)
3	Monitor anode (-)	8	NC
4	Monitor cathode (+)	9	Package ground
5	Thermistor	10	TEC (-)

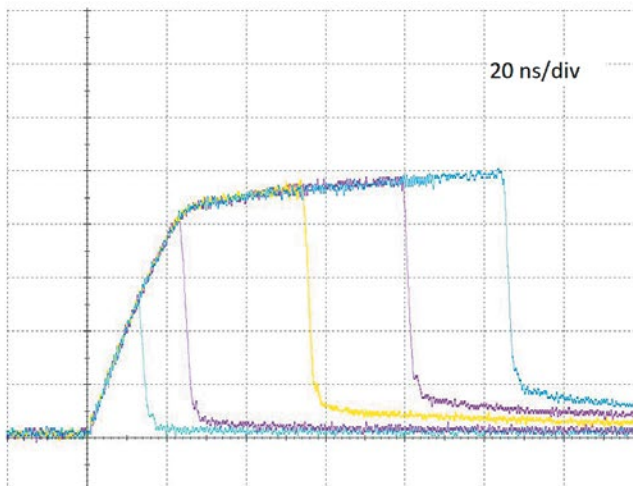
## Typical Performance Characteristics



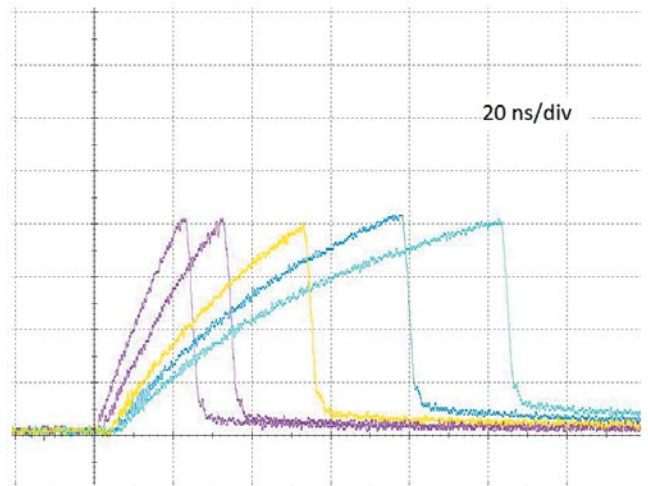
20 ns pulses different pre-shaping



50 ns pulses different pre-shaping



20 ns pulses different pre-shaping



50 ns pulses different pre-shaping