

PLD-NS-GSS-Tr

PRE-SHAPING SHORT LASER DIODE DRIVER



Key Features

- Special Design for 10/14 pin Butterfly Laser Diode
- Output current up to 2000mA
- Compliance voltage up to 3V
- Adjustable pulse width 1-100 ns
- Repetition rate up to 10MHz
- External trigger option
- USB, RS-232, CAN, UART interfaces
- LabView and Python libraries
- On-Board TEC Controller
- 5Vdc Input Power
- Completed by Heatsink
- Compact Size 85 mm x 60 mm x 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 5 VDC 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) thermoelectric cooler controller (TEC) with current capability of 1.5 A and a voltage capability of 4 V.

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 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
INPUT				
Voltage	4.8	5.0	5.2	VDC
Current	-	-	2	A
External trigger (50 Ω)	3.3	-	5	VDC
OUTPUT				
Current	-	-	1000	mA
Compliance Voltage	1	-	3	V
Pulse width**	10	-	500	ns
Pulse width step	-	0.2	-	ns
Repetition rate*	0.001	-	10000	kHz
Bias current	-	-	150	mA
Rise time **	8	-	100	ns
Fall time ***	2	-	5	ns
TEC current	-1.5	-	1.5	A
TEC Voltage	-	-	4	V
TEC Temperature Set	15	25	50	°C
TEMPERATURE				
Operating	+10	-	+50	°C
Storage	-20	-	+70	°C
Humidity, Non-Condensing	-	-	95	%
CONNECTIONS				
Power and interface connector	Terminal block (1-282834-0 TE connectivity)			
USB	Mini-USB, Type B (1734035-1 TE connectivity)			
MECHANICAL				
Size	85 × 60 × 21mm			
Weight, not more	160 g			

* Maximum duty cycle is limited to 2 %

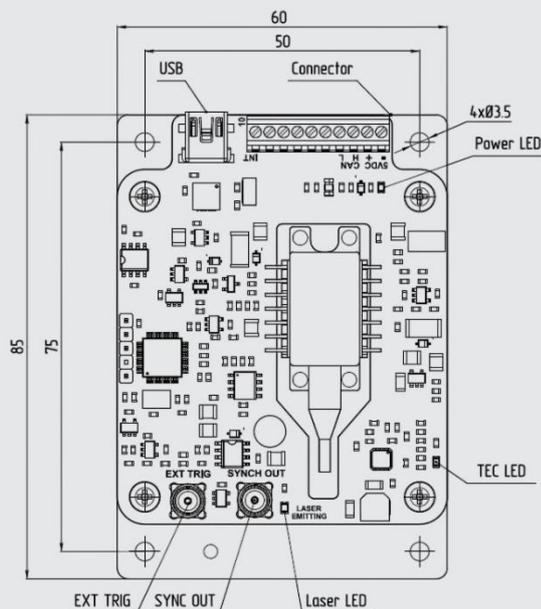
** Output performance depends upon laser diode characteristics. Performance cannot be guaranteed for all laser types. See optical output waveforms
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Dimensions and Connections

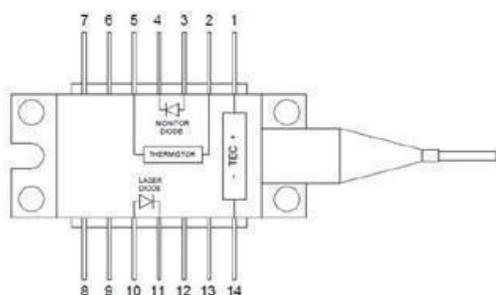
Connector pinout

PIN	Function	Description
1	GND	Device ground
2	+5VDC	Power input
3	CANH	CAN bus high
4	CANL	CAN bus low
5	RS232 TX	RS232 port transmit
6	RS232 RX	RS232 port reception
7	GND	Device ground
8	UART TX	UART TX
9	UART RX	UART RX
10	INT	Interlock



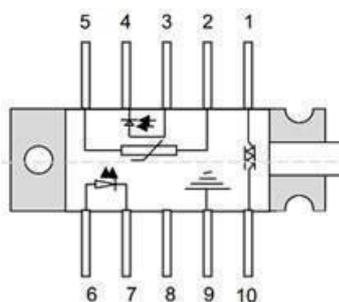
Compatible Laser Pinout

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 (-)

