PLD-NS-GSS

GAIN SWITCH SUPPRESSED 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 2–100 ns
- Repetition rate up to 1 MHz
- External trigger option

- · Gain switch suppress option
- USB, CAN interfaces
- On-Board TEC Controller
- 5 VDC Input Power
- Completed by Heatsink
- Compact Size 85 mm × 60 mm × 21 mm

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Description

The PLD-NS-GSS 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 (pulse current, bias current, pulse width, repetition frequency, temperature set) are controlled by computer interface.

The PLD-NS-GSS is specifically designed to suppress gain switching by controlling the bias current. The PLD-NS-GSS has an external TTL-compatible input for repetition rate control from single shot up to 1 MHz.

The PLD-NS-GSS 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.	Тур.	Max.	Units		
INPUT							
Voltage		4.8	5.0	5.2	V		
Current		-	-	2	А		
External trigger (50 Ω)		3.3	-	5	V		
OUTPUT							
Pulse Current		-	-	1000	mA		
Compliance Voltage		1	-	3	V		
Bias Current		-	-	150	mA		
Pulse width *		2	-	100	ns		
Pulse width step		-	0.2	-	ns		
Repetition rate *		0.001	-	1000	kHz		
Rise time **		0.3	-	0.5	ns		
Fall time **		0.2	-	1	ns		
TEC current		-1.5	-	1.5	А		
TEC Voltage		1		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 × 21 mm						
Weight, not more	160 g						

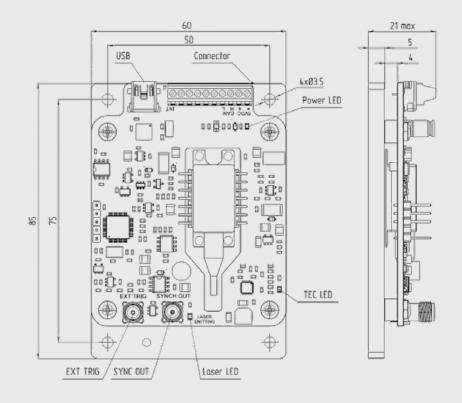
* Maximum duty cycle is limited to 2%

** Output performance depends upon laser diode characteristics

Dimensions and Connections

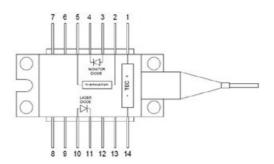
Connector pinout

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	



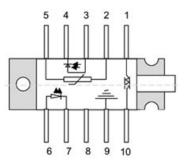
Compatible Laser Pinout

14-pin Butterfly package



Nº	Description	N⁰	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

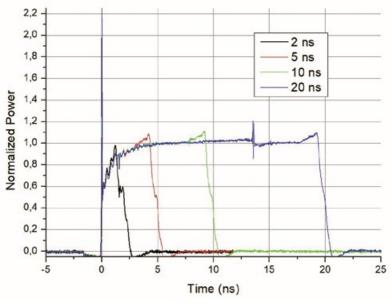
10-pin Butterfly package



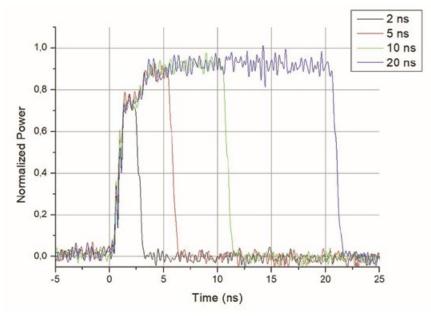
N⁰	Description	Nº	Description
1	TEC (+)	6	Laser anode (+)
2	Thermistor	7	Laser cathode (-)
3	Monitor anode (-)	8	NC
4	Monitor cathode (+)	9	Package ground
5	Thermistor	10	TEC (-)

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Typical Performance Characteristics



No Gain Switch Suppress



Gain Switch Suppress