

PLD Series Laser Diode Driver



FEATURES

- Printed circuit board-mounted module
- Output current: 0.2, 0.5, 1.25, 5.0, and 6.5 A in Constant Power and Constant Current operating modes
- Single 5 VDC supply operation
- Separate laser diode supply input allows for compliance voltages up to 30 VDC
- Manual adjustments
 - » Current Setpoint and Current Limit
 - » Photodiode sensitivity
- Remote adjustments for OEM applications
 - » Current setpoint and modulation
 - » Output Enable/Disable
 - » Monitors for output current, photodiode current, output current limit, and limit status
- Safety features protect the laser diode
 - » CDRH Output On delay and slow start
 - » Mechanical shorting relay on output
 - » Latching current limit
- PLDEVALPCB accessory board speeds development time and reduces prototyping costs
- Easily computerized with the USBKIT
- Chassis-mount models also available

RELIABILITY YOU CAN TRUST

The PLD Series Laser Diode Drivers deliver the reliability and performance you expect from a Wavelength Electronics laser driver in a compact and easy-to-integrate package. Tens of thousands of PLD drivers are deployed in laser systems around the world, proving beyond doubt the reliability and stability of the design.

PLD Series drivers are found in particle counters, manufacturing vision systems, photovoltaic quantum efficiency testers, wavefront scanners, fiber aligners, and laser diode LIV testers.

DESIGNED FOR EASY INTEGRATION

The PLD drivers operate from a single 5 V power supply. To accommodate high compliance lasers, or multiple stacked lasers, the PLD laser diode drivers allow the laser to be driven from a separate power supply up to 30 V.

The available PLDEVALPCB evaluation circuit board reduces your development costs and allows you to focus on designing the features that will set your system apart.

PRACTICAL FEATURES, ROBUST DESIGN

Thoughtfully designed features provide valuable benefits and protect the laser against operational anomalies:

- Remote enable can be tied to a safety interlock and a temperature controller, such as Wavelength's PTC Series.
- Built-in constant current and constant power operating modes minimize your electronics overhead.
- On-board controls mean quick and easy driver setup.
- Analog setpoint input gives you remote external control of the laser current and modulation.
- Latching current limit safely switches off output if current limit is reached.

VALUABLE LASER SAFETY FEATURES

Built-in safety features make your product more robust to real-world operating conditions: latching current limit, slow start circuit, and a mechanical shorting relay protect the laser and ensure long-term system reliability. Long-term reliability means better up-time, fewer service calls, and more customers who are satisfied with your products.

COUNT ON WAVELENGTH ELECTRONICS

Our Sales Engineers have the experience to help you choose the right laser diode driver for your application. Call today or visit our website to find out how Wavelength Electronics can help you to be successful.

PLD Series

Laser Diode Driver

PLD DRIVER SPECIFICATIONS

DRIVER OUTPUT CURRENT	PLD200	PLD500	PLD1250	PLD5000	PLD6500	UNIT	NOTE
Max Output Current	0.2	0.5	1.25	5.0	6.5	A	
Short Term Stability, 1 hr	< 100	< 100	< 100	< 200	< 200	ppm	constant current mode
Short Term Stability, 1 hr	< 0.02					%	constant power mode
Compliance Voltage	< 3					V	V_{DD} and $V_S = 5$ V
Compliance Voltage	< 28					V	$V_S = 30$ V; V_S and V_{DD} separated
Temperature Coefficient	< 200					ppm / °C	
Photodiode Feedback Range, Low	15 – 500					µA	
Photodiode Feedback Range, High	50 – 5000					µA	Type A/B lasers only
EXTERNAL MODULATION							
Modulation Bandwidth, 3 dB	190	200	200	150	100	kHz	constant current mode, sinewave
Rise / Fall Time	3 / 5					µs	to full scale
Depth of Modulation at 100 kHz	90					%	
POWER SUPPLY REQUIREMENTS							
Supply Voltage (V_{DD})	5.0 – 5.5					VDC	V_{DD} and V_S tied
Supply Voltage (V_S , High Compliance)	3.0 – 30.0					VDC	Separate V_{DD} and V_S
Supply Voltage (V_S , Type-C Lasers)	8.0 – 12.5					VDC	Requires separate V_{DD} and V_S
Max Internal Power Dissipation	3	9	12	15	15	W	Refer to Safe Operating Area chart in product datasheet.
Quiescent Current	50	50	150	150	250	mA	
ABSOLUTE MAXIMUM RATINGS							
	VALUE		UNIT	NOTE			
Supply Voltage (V_{DD})	5.5		VDC	PLD and laser can be driven from a single 5 V power supply			
Supply Voltage, High Compliance (V_S)	30.0		VDC	High compliance lasers can be driven from a separate supply			
Supply Voltage, Type-C Lasers (V_S)	12.5		VDC	Type-C lasers require a separate V_S power supply			
Case Operating Temperature	0 to 50		°C				
Case Storage Temperature	-55 to 125		°C				
Weight	5		oz	136 g			
Size	PLD200	1.52 x 2.65 x 0.81		inches	38.6 x 67.3 x 20.6 mm		
	PLD500	1.52 x 2.65 x 1.10			38.6 x 67.3 x 27.9 mm		
	PLD1250, PLD5000, PLD6500	1.52 x 2.65 x 1.82			38.6 x 67.3 x 46.2 mm		

Additional specifications are available in the product datasheet; download at www.teamWavelength.com/products/product.asp?part=34

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
PLD200	200 mA Laser Diode Driver
PLD500	500 mA Laser Diode Driver
PLD1250	1.25 A Laser Diode Driver
PLD5000	5.0 A Laser Diode Driver
PLD6500	6.5 A Laser Diode Driver
PLDEVALPCB	Evaluation PCB for PLD Series
USBKIT	USB Interface kit, with software

Free, effective, and responsive technical support is available to simplify integration of Wavelength products into your OEM design. Standard product can be modified to meet your unique application requirements.

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