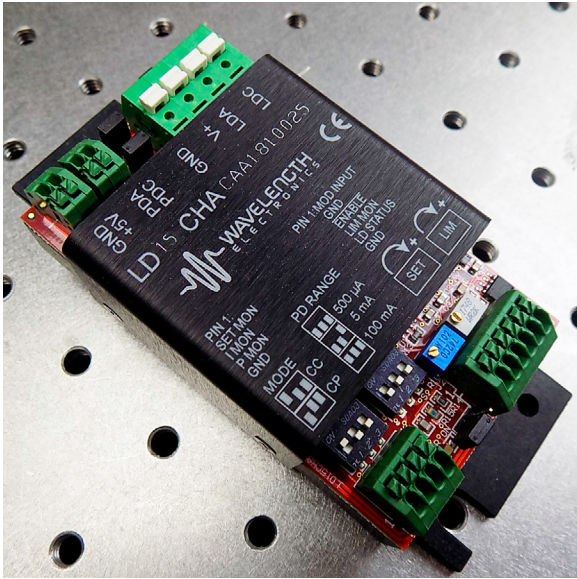


LDxCHA Series

Low Noise up to 15 A / 28 V Laser Diode Drivers



FEATURES

- Models: 2.5 A, 5 A, 10 A, 15 A
- Supports Type A and Type B lasers
- Single supply operation at +5 VDC for single emitters (3 V maximum to laser)
- Dual supply operation up to +30 VDC (28 V maximum to laser)
- Constant Current or Constant Power modes
- Safety features protect your laser
 - » Adjustable clipping current limit
 - » Slow-start and delay circuitry
 - » Brownout protection
 - » Over-voltage protection
- Bandwidth 280 kHz to 1 MHz in Constant Current mode (model dependent)
- RMS Noise Current as low as 7 μ A at 100 kHz

QUICK AND EASY CONNECTIVITY

The LDxCHA features spring-loaded terminal blocks to make all wiring to the unit as easy as possible. On-board DIP switches, trimpots, and jumpers allow for simple setup. Monitor pins are provided for current limit, current setpoint, actual output current, and output power.

A single 5 V supply can be used to operate the laser driver. With a single supply, a maximum of 3 V will be available to the laser. If higher voltage at the laser is required, the LDxCHA supports up to 30 V supplies. If high voltage operation is used, a separate 5 V supply is required to power the control electronics. A jumper on the board configures single or dual supply operation.

PROTECT YOUR LASER

When using the LDxCHA to drive lasers, configuration of operational parameters can be achieved prior to enabling current to the laser. By letting the Enable pin float (or holding the voltage high) and connecting a power supply, both the output current limit, and the output current setpoint can be set to operating parameters using their corresponding monitor pins. Once configuration is done, short the Enable pin to ground to operate at the pre-set parameters.

The clipping current limit ensures that the user-set output current limit will never be exceeded without disabling current to the laser, even when modulation is used to vary the output.

The LDxCHA monitors the voltage that is provided by the power supply. If this voltage is above or below the specification for supply voltage, the unit will disable output current to protect the laser.

CURRENT, STABILITY, AND BANDWIDTH

With four models ranging from 2.5 A to 15 A, the LDxCHA Series has <200 ppm stability across the product line when used in Constant Current mode.

With RMS Noise Current as low as 7 μ A at 100 kHz, these low noise laser drivers consistently provide the desired current.

The LD2.5CHA has a -3 dB Bandwidth of greater than 1 MHz when operating in Constant Current mode at full output current.

406-587-4910

www.teamWavelength.com

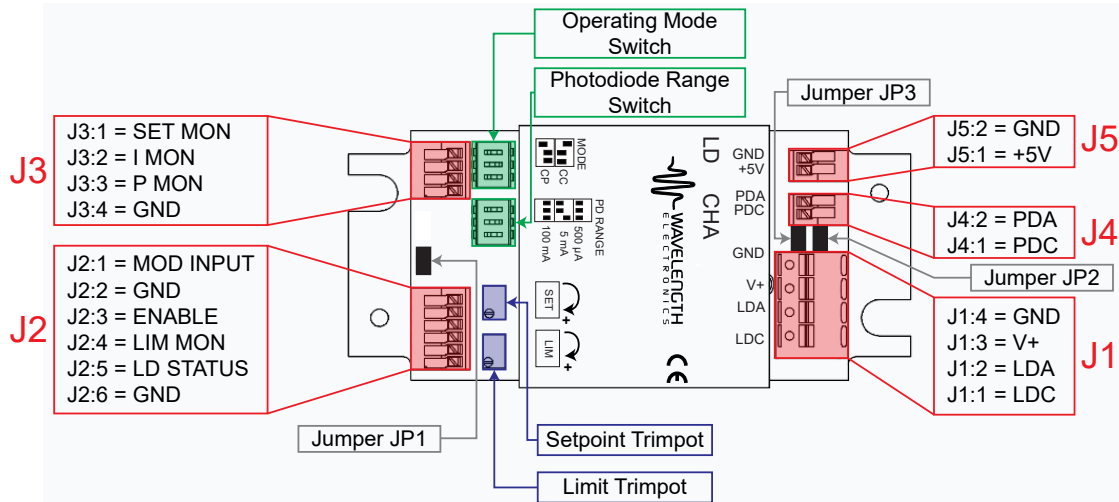


LDxCHA Series

Low Noise up to 15 A / 28 V Laser Diode Drivers

WIRING AND CONFIGURATION

Five spring-loaded terminal blocks (labeled J1-J5 below) ensure easy wiring to and from the power supply and the laser. Two DIP switches configure operating mode (either Constant Current or Constant Power) and photodiode range (for Constant Power operation). Two on-board trimpots allow local setting of the output current setpoint and output current limit. Three jumpers (labeled JP1-JP3) allow for quick configuration for disabling modulation input, multiple power supplies, and tying the photodiode cathode to the laser diode anode.



LDXCHA LASER DIODE DRIVER SPECIFICATIONS

PARAMETER	LD2.5CHA	LD5CHA	LD10CHA	LD15CHA	UNIT	NOTE
Max Output Current	2.5	5	10	15	A	
Max Internal Power Dissipation (with airflow)	35	35	70	85	W	25°C ambient 5.5 CFM: 2.5, 5 A models 12CFM: 10, 15 A models
Compliance Voltage	3 V max with 5 V power supply input 28 V max with 30 V power supply input				V	Always 2 V less than power supply voltage
Short Term Stability, 1hr	< 200				ppm	Constant Current Mode
Constant Power Mode Output Stability	0.14	0.27	0.03	0.03	%	200 μA photodiode range, simulated load
RMS Noise Current	7	9	22	35	μA	100 kHz, 500 mA output current
Noise Current Density	20	35	95	100	nA / √Hz	500 mA output current
Leakage Current	0				μA	
Quiescent Current	130				mA	
Temperature Coefficient	100				ppm / °C	
Bandwidth at 90% Depth of Modulation	1000	430	360	280	kHz	Constant Current Mode Half of maximum output current

Additional specifications are available in the product datasheet.

Download at: www.teamwavelength.com/download/Datasheets/LD15CHA.pdf

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
LD2.5CHA	2.5 A Laser Diode Driver
LD5CHA	5 A Laser Diode Driver
LD10CHA	10 A Laser Diode Driver
LD15CHA	15 A Laser Diode Driver



Free, effective, and responsive technical support is available to simplify integration of Wavelength products into your OEM design.

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