

LDP-C 50-05

Driver for High Power Laser Diodes

Rev. 1905

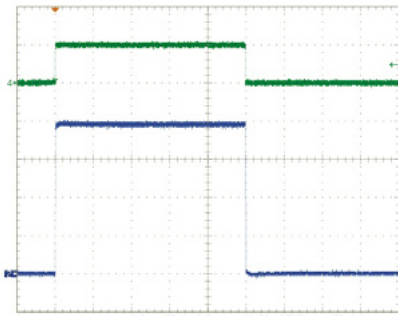


Figure: Current monitor output, scale: 10A/Div

Product Description

The LDP-C 50-05 is a very affordable, compact and efficient current supply to drive laser diodes. The pulsing capability ranges from single pulses over several hundred kilohertz repetition frequency up to continuous operation. Besides pulsing the diode, analog modulation of the output current is also possible. Its intended field of application is laser soldering and welding as well as generic surface treatment.

The innovative current regulation concept of the LDP-C 50-05 produces, compared to the commonly used linear regulation concept, considerably less losses. Hence, only one supply voltage is needed for the control logic and the power stage. The current consumption drawn from the power supply only needs to cover the average laser power and is typically much less than 50 A.

- Output current: 1 .. 50 A
- Output current between pulses: 0 A
- Compliance voltage: 1 .. 5 V
- Coverage of both cw and qcw range
- Analog modulation up to 16 kHz
- Half brick size OEM module
- Several protective features
- Adjustable current rise time
- High efficiency

Technical Data*

Output current	1 .. 50 A
Max. compliance voltage	5 V
Typ. pulse rise time (10 A)	400 ns .. 1 μ s (adjustable)
Typ. pulse trigger delay	200 ns **
Min. pulse width	< 1 μ s
Max. pulse width	cw
Max. repetition rate	500 kHz
Current ripple	< 400 mA, > 200 kHz
Current overshoot	< 1 %
Analog modulation (10 A _{pp})	< 16 kHz
Current settling time (full-scale)	< 60 μ s
Pulse trigger input	5 V TTL into 500 Ω
Current setting input	0 .. 2 V external (25 A/V)
Current monitor	25 A/V
Voltage monitor	0.1 V/V
Supply voltage	4 .. 6 V DC (at least 1 V above compliance voltage)
Max. power dissipation	30 W
Dimensions in mm	60.9 x 57.8 x 54
	Half brick size
Weight	194 g
Operating temperature	0 to +55 °C

* Specifications measured with a fast recovery diode instead of a laser diode. Technical data is subject to change without further notice.

** Max. 2 μ s at longest rise time

Designed to shield your laser diode from damage, the LDP-C 50-05 features a number of powerful protective safeguards:

- Innovative current regulation concept actively prevents laser diode from overshoots and overcurrent
- Integrated Soft Start
- Protection against transients through regulated current rise time
- Overtemperature shutdown
- Enable/Disable input
- Driver status output
- Shunt MOSFETs short the output clamps in case of an error
- Protection of the laser diode against reverse currents

Optional Accessories: LDP-C BOB