



Description

LDDP-20-55 is an OEM driver module for integration designed to supply laser diode strings of multiple single emitters in series. Its unique buck/boost switching topology allows DC/DC operation with load compliance voltage even exceeding the DC input voltage: Standard diode drivers with buck converter require a load voltage for minimum ca. 2 V below the supply input. LDDP can supply loads from 0 .. 55 V from a DC input between 24 .. 52 V, as long as the input current does not exceed 25 A. System designers can thus keep using usual low cost 24 V auxiliary supplies although more and more laser diodes exceed yet the 30 V compliance voltage level.

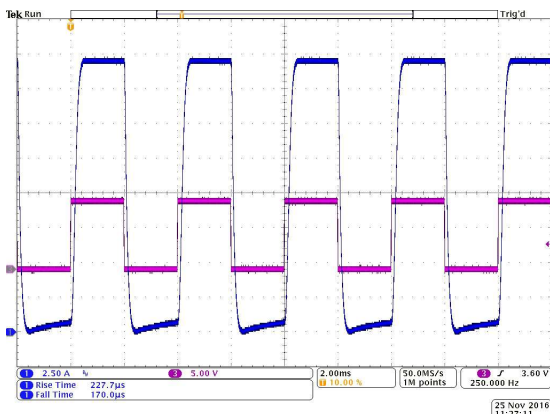
LDDP is fast analog regulated. The up to 99 % highly efficient switching regulation provides pulses or up to 100 % amplitude modulation with typ. 200 μ s rise/fall times.

An even faster high speed model (-HS) with typ. rise/fall times <50 μ s and analog modulation to >20 kHz is optionally available.

Besides standard industrial and medical use its low current ripple/noise makes it especially suitable for sensitive pumping applications.

The standard model provides differential signal I/Os for all digital and analog signals.

A 10pin interface option (-10P) provides common GND w/ differential setpoint input.



Features

- Output current up to 20 A
- Buck/boost $U_{out} = 0 .. 55$ V independent of U_{in}
- Typ. 200 μ s rise/fall time
- Very low current ripple/noise <0.25 %
- Efficiency to 99 %
- Especially suitable for fiber laser amplifiers and burn-in systems with multiple single emitter strings

Specifications

Output	0 .. 20 A / 0 .. 55 V ^{*)}
Rise/fall time	typ. 200 μ s (rise/fall time <50 μ s by option -HS)
Current ripple	typ. <±0.25% (of full scale)
Current programming	0 .. 10 V = 0 .. 20 A (2 A/V)
Prog. accuracy	typ. <±2 % (of set-point within specified range)
Monitoring I/U	0 .. 10 V (I_{mon} 0.5 V/A, U_{mon} 0.1 V/V, real time)
Monitoring accuracy	typ. <±2 % (of set-point within specified range)
Protective features/error output	Monitor starting sequence, soft start, transient protection, OVP, over temperature, over current, protection shut down reaction time <1 μ s Fault = high impedance, ok = low imp.
Control interface	Quasi isolated: Interface GND can float max. ±5 V versus negative input terminal, connector JST 16pin S16B-RADSS-1 Digital RS485, USB, I ² C upon request
Efficiency	typ. 98 %
Input	typ. 48 VDC, allowed range 24 .. 52 VDC
Input capacity	1 mF
Environment	-20 °C .. +50 °C (non condensing)
Cooling	Conductively via baseplate, max. power dissipation 20 W
Baseplate temperature	max. +50 °C
DC connectors in/out	Screw terminals M4
Size [LxWxH]	ca. 120 x 75 x 34 mm

^{*)} max. output power up to 1 kW. Specified output voltage range 2 .. 55 V, independent of input voltage (U_{in} 24 .. 52 V DC). Input current must not exceed 25 A. Specified output range 2 .. 20 A

