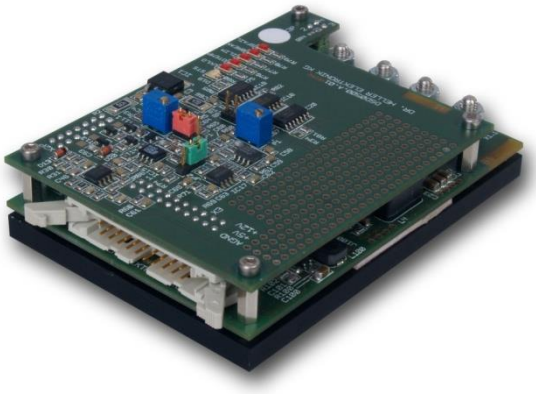
Data Sheet
Issue 2014/07

DR. HELLER ELEKTRONIK
OPTO | RF | POWER

DSD 500 SERIES
HIGH EFFICIENCY LASERDIODE-DRIVER



- efficiency typ. 90 %
- laser current up to 50 A
- constant current / constant power mode[1]
- single supply 5 V to 9 V
- comprehensive transient protection
- pulse modulation up to 1 kHz [1]
- analog modulation up to 5 kHz [1]
- 10 usec turn off time on fail
- status-indication by LED`s
- compact low cost OEM-unit

The **DSD 500 laserdiode drive**r delivers a stable and low noise **output current up to 50 A**. A wide variety of laser diodes resp. laser bars can be operated without danger.

The driver uses a special **switchmode topology** to achieve an **exceptional low output ripple** together with an **efficiency surpassing the 90 % margin**.

Under normal operating conditions **additional cooling equipment** such as a heatsink or fan **is not neccessary**.

The output **current can be adjusted from 0 to 50 A**, either manually by an on-board potentiometer or by an external control voltage

The basic operating mode is the **constant current mode**, at which the **constant power mode** is available as an option.

Upon request some additional circuitry can be installed to allow both for **digital as well as analog modulation from DC to 5 kHz**.

An **adjustable current limit** with a very short response time offers an **individual protection** for virtually all laserdiodes.

The driver is operated from a **single DC voltage from 5 V to 9 V**. with no exceeding demands concerning the signal quality.

Several integrated protection circuits permit operating operate the laserdiode without any risk even under harsh conditions such as line break , power fail or strong electromagentic disturbances.

In any case the time **limit for a controlled turn off is well below 10 usec**.

An integrated **NTC sensor** monitors the temperature of the high power switching transistors and **disables the laser output** if a critical temperature level is reached.

The **interlock loop** complies with the regulations by law concerning the **laser safety**.

A series **of on-board LED`s shows the actual state** of the driver.

[1] optionally

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SPECIFICATIONS FOR THE DSD 500 SERIES

operating modes	constant current (see options)
laser current ranges	0 to 50 A
current stability	≤ 0,5 % of range
ripple & noise	≤ 100 mArms
current control	manually or by an external control voltage + 1 V corresponds to 10 A (see options)
output compliance voltage	≥ 2,5 V @ 50 A
monitor output laser current	+ 1 V corres ponds to 10 A source resistance 1 kΩ short circuit protected
current slew rate @ power on	50 A/sec
turn off time on fai	≤ 10 usec [2] @ laser line break @ driver overtemperature @ supply undervoltage
transient protection	3 fast protection circuits EMC filters on DC input and control inputs/outputs
input power	5.0 V ... 9.0 VDC [3] current drawn depends on the output load and the input voltage standby currrent typ. 150 mA
ambient temperature range	- 10 °C .... + 35 °C
dimensions	100 x 70 x 30 mm

[2] specification holds for a laser loop inductance of 1 µH
[3] high voltage versions up to 15 V upon request

OPTIONS

additional operating mode	constant power mode
analog modulation capability	DC – 5 kHz (-3 dB) input resistance 5 kΩ + 1V corresponds to 10 A
digital modulation capability	DC – 1 kHz TTL-compatible rise- / falltime ≤ 50 µsec @ 50 A

Please note: Specifications are subject to change without notice