BDS-SMY Family Picosecond Diode Lasers

The BDS-SMY lasers close the wavelength gap in the spectrum of ps diode lasers in the 520 to 630 nm range. The lasers are based on the QLD series laser modules of QD Laser Inc., Japan. These modules contain an IR laser diode, an amplifier diode, and a frequency doubler. Combined with bh BDS laser series technology, the BDS-SMY lasers provide picosecond light pulses of short pulse width and narrow bandwidth at wavelengths of 532 nm, 561 nm, and 594 nm.

Small-size module, 40 x 40 x 120 mm³ or 40 x 70 x 120 mm³
Wavelengths 532 nm, 561 nm, 594 nm
Free-beam or single-mode fibre output
Pulse width down to 50 ps
Pulse repetition rate 50 MHz (20 MHz on request)
Ext. trigger or internal clock synchronisation
CW-equivalent power 0.3 to 0.5 mW @ 50 MHz
Fast ON/OFF and multiplexing capability
High power stability
All electronics integrated
No external driver unit
Simple +12 V power supply
Compatible with all bh TCSPC devices

Pulse shapes and power levels may change due to development in laser diode technology. Coupling efficiency into single-mode fibres is 40 to 60 %.

*Laser power and power control is optimized for one frequency.

Designed and manufactured by

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Optical
Repetition Rate, switchable by TTL signal
Wavelengths
Power control range (in free beam)
Beam diameter, free beam
Polarisation
Coupling efficiency into single-mode fibre, typically

Trigger Output, to TCSPC Modules
Pulse Amplitude
Pulse Width
Output Impedance
Connector
Jitter between Trigger and Optical Pulse

Synchronisation Input
Input amplitude
Duty cycle
Input frequency
Connector
Switch between internal clock and sync input

Control Inputs
Laser ON/OFF
Response of optical output to ON/OFF signal
External Power Control
Response time of optical output to power control
F1: 50 MHz
F2: 20 MHz

Power Supply
Power Supply Voltage
Power Supply Current at 12V

Mechanical Data
Dimensions (OEM)
Dimensions (w/ cooling)
Mounting holes
Heat sink requirements

Connector Pin Assignment
Connector version
Power supply +12V
GND
Power control voltage
Laser ON/OFF (TTL/CMOS, active H)
F2: 20 MHz (active H, int. pull-down resistor)
F1: 50 MHz (active H, int. pull-up resistor)
Do not connect:

Maximum Values
Power Supply Voltage
Voltage at ‘Laser ON/OFF’ and ‘Frequency’ inputs
Voltage at ‘Laser Power’ input
Ambient Temperature

1) Laser power and power control is optimized for one frequency, only.
2) Depends on case temperature due to laser diode cooling. Cooling current changes with case temperature.
3) OEM version without active cooling must be mounted on heat sink. Case temperature must remain below 40 °C.

Related Products
BDS-MM picosecond diode lasers, BDS-SMN picosecond and CW diode lasers, 375, 405, 445, 473, 488, 515, 640, 685, 785, 1064 nm

Caution: Class 3B laser product. Avoid direct eye exposure. Light emitted by the device may be harmful to the human eye. Please obey laser safety rules when operating the devices.
Complies with US federal laser product performance standards.

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