LD4B
Laser Diodes for Business

LD4B-1556-DFB-2.5G-3-ISO

Preliminary

OVERVIEW

Laser diode with a built-in isolator coupled to an optical fiber and packaged into a hermetic case.

MAIN FEATURES

- Wavelength: 1555-1558 nm
- Cavity type: DFB
- Optical power in CW mode in single-mode fiber: >3 mW at Ith + 20mA, T = 25 °C
- Data rate 2.5 Gbps
- Package types: coaxial, coaxial with bracket
- Built-in monitor photodiode

ORDERING INFORMATION

LD4B-1556-DFB-2.5G-3-ISO-X-X-X-X-X-X

Case type

COAX: compact coaxial (low duty cycle pulse mode only)
COAXB: compact coaxial with a panel-mount bracket
COAXH: compact coaxial with a board-mount bracket

Pinout code

2: see more details on page 5

Fiber type

SM1: SM, G.657.A1, Corning SMF-28 Ultra, furcation tubing ⌀0.9 mm or **BSM1** ⌀0.25mm
SM3: SM, G.657.B3, Corning ClearCurve ZBL, furcation tubing ⌀0.9 mm or **BSM3** ⌀0.25mm
SMP13: PM, Corning PM1300, PANDA type, furcation tubing ⌀0.9 mm
Other type on request

Connector type

FA: FC/APC (SM1, SM3, SMP13)
SA: SC/APC (SM1)
N: no connector (scissors cut)
Other type: on request

Test measurements

CW: CW mode (electro-optical parameters at T=25+/-5 C and spectrum)
P: Pulse mode (pulse duration 10 us, duty cycle 1%, at T=25+/-5 C)
CWP: both CW and pulse mode

Fiber length

0.5: 500+/-50 mm
1.0: 1000+/-100 mm
Other length on request

Version 2610

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ABSOLUTE MAXIMUM RATINGS

Parameter		Value	Unit	Conditions
Laser diode CW forward current	I_{max}	120	mA	CW, T = 25°C
Laser diode pulse forward current	I_{pmax}	260	mA	Pulse, 10 us, duty cycle 1%, T = 25°C
Laser diode reverse voltage	V_{RL}	2	V	
Photodiode reverse voltage	V_{RP}	20	V	
Photodiode forward current	I_{FP}	2	mA	
Operating temperature*	T_{op}	-40 - +85	°C	Coaxial package
Storage temperature	T_{stg}	-40 - +85	°C	
Soldering temperature	T_{sold}	260	°C	Max. 5 seconds

*Operating temperature is defined by the case temperature. It is necessary to ensure sufficient heat dissipation so that the module's maximum operating temperature is not exceeded. Operation at elevated temperatures reduces the lifetime of the laser diode.

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ELECTRICAL-OPTICAL CHARACTERISTICS (T = 25 °C)

Parameter		MIN	TYP	MAX	Unit	Conditions
Optical power (CW)	P_{cw}	3	4		mW	CW, I_{op} = Ith + 20 mA, SM1
Optical power (CW) at 85 °C	P_{cw}		2.5		mW	CW, I_{op} = Ith + 20 mA, SM1, T = 85 °C
Optical power (Pulse)	P_p	40	50		mW	Pulse, Ip = 250 mA, duration 10 us, duty cycle 1%
Peak wavelength	λ	1555	1556	1558	nm	CW, I_{op} = Ith + 20 mA
Spectral width, OSA*	Δλ		0.1		nm	CW, I_{op} = Ith + 20 mA, OSA, -20dB
Wavelength-temperature coefficient	dλ/dT		0.106		nm/°C	CW, I_{op} = Ith + 20 mA
Side-mode suppression ratio	SMSR	35	40		dB	CW, I_{op} = Ith + 20 mA
Threshold current	I_{th}		6	15	mA	CW
Threshold current at 85 °C	I_{th}		30	45	mA	CW, T = 85 °C
Slope efficiency	S_e	0.15	0.20		mW/mA	CW, SM1
Operating voltage	V_{op}		1.0	1.6	V	CW, I_{op} = Ith + 20 mA
Monitor current	I_m	0.1	0.3	0.8	mA	CW, I_{op} = Ith + 20 mA, V_r = 5 V
Rise and fall time	t_r, t_f			100	ps	20%-80%
Cut-off frequency	f_r		2.5		GHz	Small-signal modulation around I_{op} = Ith + 20 mA
Dark current (PD)	I_d			100	nA	V_R = 5V
Polarization extinction ratio	PER	20			dB	CW, SMP13
Isolation	ISO		40		dB	
Isolation within T = -40 to +85 °C	ISO	20			dB	

* Spectral width measured by an OSA does not characterize correctly the instantaneous spectral width of a DFB laser diode which is typically < 0.01 pm, since the resolution of an OSA is too rough

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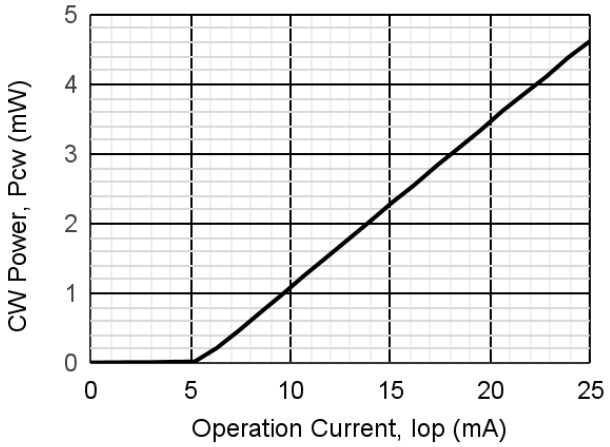

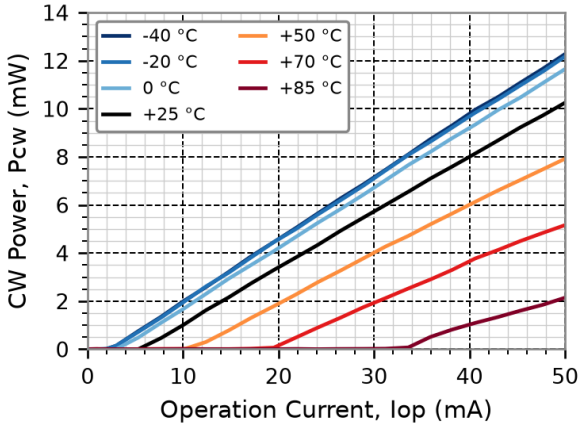

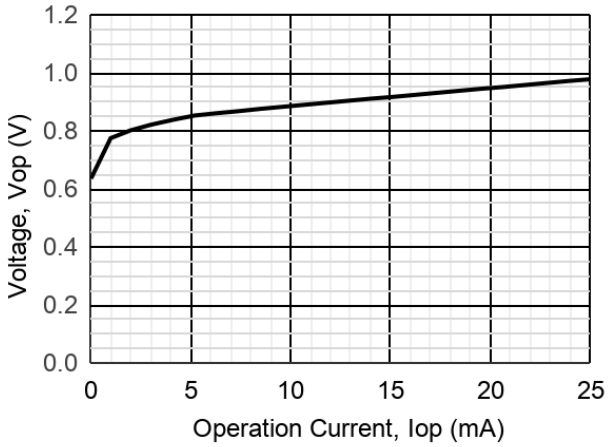

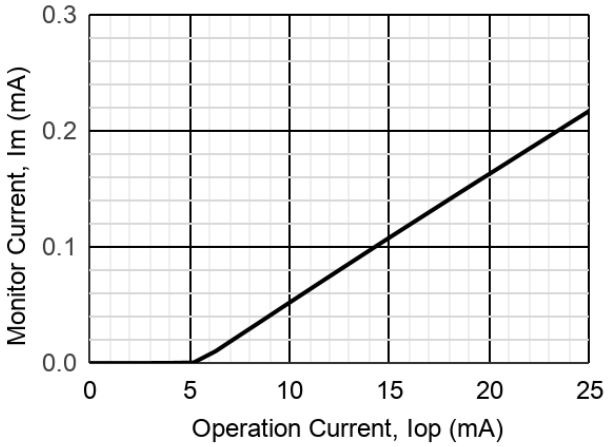

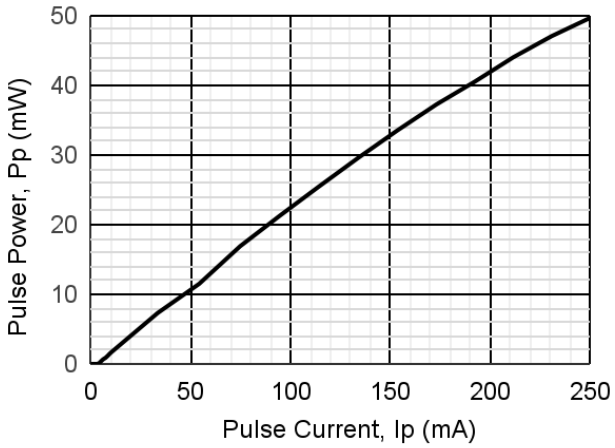

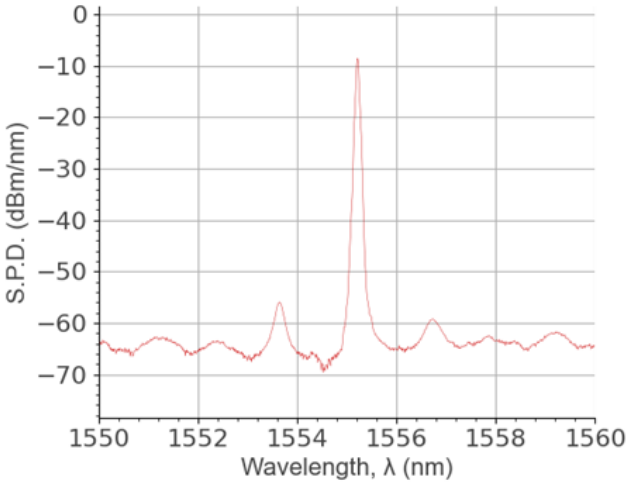

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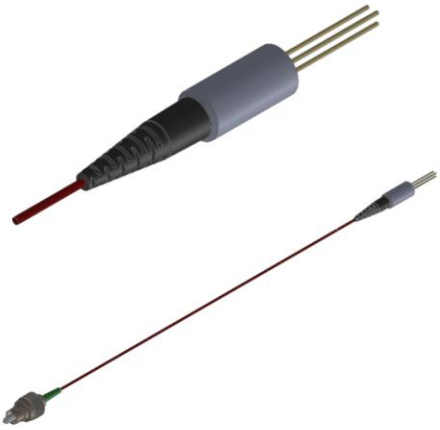
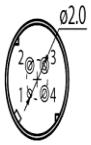


COAX

BACK VIEW



PINOUT
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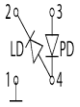
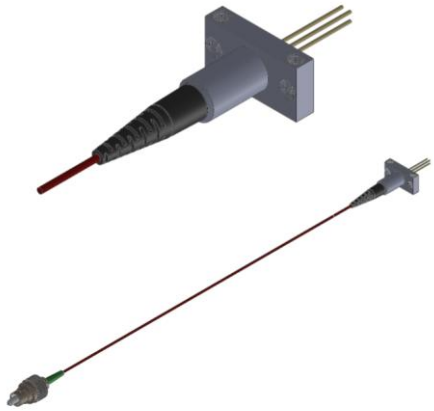


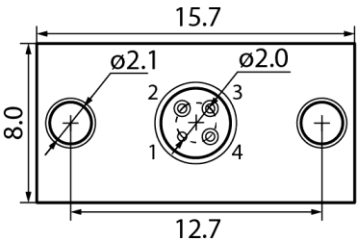
Download more information

Drawing | 3D model | Application Notes



COAXB

BACK VIEW



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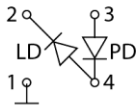

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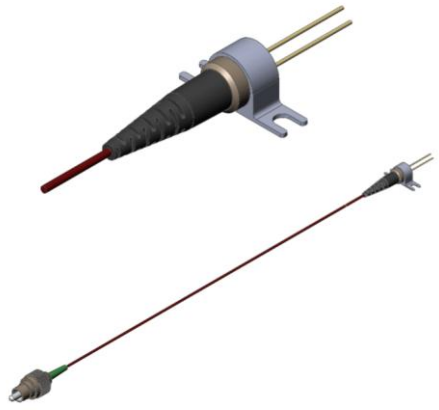
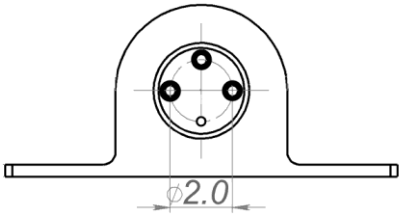


COAXH

BACK VIEW



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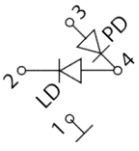

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Characteristics, data, materials and structures specified in this datasheet are subject to change without notice. Please refer to the latest specification before use of the products.

Safety and handling cautions

1. Avoid smashing and burning of the module. Avoid storing and using the module in conditions where water, organic solvents or aggressive acids or bases may contact the module or where there is a possibility of exposure to corrosive gases, explosive gases, dust, salinity or other harsh conditions. The module should be disposed as special industrial waste.

2. Exceeding absolute maximum ratings even for a short time can cause permanent damage of the module.

3. The module is sensitive to and can be broken by ESD (static electricity).

Conflict Minerals Policy Statement

LD4B achieves business objectives and customer needs with social responsibility. We do not support or contribute to the violence and human rights violations associated with the mining of conflict minerals coming from Conflict Regions according to US "Dodd-Frank Act". When possible, our suppliers' conflict mineral statements are reviewed. We do not directly purchase Conflict Minerals from any source and do not knowingly procure any parts and products containing Conflict Minerals from Conflict Regions.

RoHS Compliance Statement

Restriction of Hazardous Substances (RoHS) directive (Directive 2011/65/EC amended with Directive (EU) 2015/863) is the directive aimed at reducing the harmful environmental impact of waste electrical equipment by restricting the use of known dangerous substances. Based on information received from our supply sources, LD4B hereby states that the banned substances listed in the RoHS directive are not found in the parts and materials used above the threshold level listed other than exceptions approved by the European Commission.

REACH Compliance Statement

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is a European Union regulation 1907/2006/EC that addresses the production and use of chemical substances, and their potential impacts on human health and the environment. Based on information received from our supply sources, LD4B hereby states compliance of the parts and materials used in manufacturing to REACH regulation. LD4B does not manufacture or import any substances or preparations as defined under REACH.