LASERSCOM
Coupling Light to Your Success

LDI-1490-DFB-50S

Preliminary

OVERVIEW

LDI-1490-DFB-50S is the laser diode coupled to an optical fiber and packaged into a hermetic case

MAIN FEATURES

- Wavelength: 1490 nm
- Cavity type: DFB
- Linewidth: <500 kHz
- Optical power: up to 50 mW in CW mode
- Package types: coaxial, coaxial with bracket, 14 pins BTF
- Built-in monitor photodiode

APPLICATIONS

- Laser systems

ORDERING INFORMATION

LDI-1490-DFB-50S-X-2-X-X-X-X

Case type

U: compact coaxial
B: compact coaxial with double-sided bracket
BTF: 14-pins BTF for active thermal stabilization (TEC and thermistor)
Other type on request

Fiber type

SMT: SM, Corning Titania-Clad, furcation tubing ∅0.9 mm, ultrasmall bending radius 2.5 mm
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
MM5: MM, 50/125, OM2, furcation tubing ∅0.9 mm
MM6: MM, 62.5/125, OM1, furcation tubing ∅0.9 mm
Other type on request

Connector type

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

FU: FC/UPC (SM1, SM3, SMT, MM5, MM6)
SU: SC/UPC (SM1)

Test measurements

CW: CW mode (electro-optical parameters at T=25+/-5 C and spectrum)

Fiber length

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

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ABSOLUTE MAXIMUM RATINGS

Parameter		Value	Unit	Conditions
Laser diode forward current	I_{FL}	330	mA	CW, T = 25 °C
Laser diode reverse voltage	V_{RL}	2	V	
Photodiode reverse voltage	V_{RP}	15	V	
Photodiode forward current	I_{Fp}	2	mA	
Operating temperature*	T_{OP}	-10 - +85	°C	Package U, B
Operating temperature*	T_{OP}	-40 - +60	°C	Package BTF (Tst = 25°C)
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 recommended 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.

Operating temperature for the BTF 14-pins case with TEC is defined for internal temperature stabilization at Tst = 25°C that corresponds to thermistor resistance Rt = 10 kOhm.

ELECTRICAL-OPTICAL CHARACTERISTICS (T = 25 °C)

Parameter		MIN	TYP	MAX	Unit	Conditions
Optical power (CW)	P_{CW}	50	60		mW	CW, I_{op} = 300 mA, SM1
Wavelength	λ	1485	1490	1495	nm	CW, I_{op} = 300 mA
Spectral width	$\Delta\lambda$		0.1		nm	CW, I_{op} = 300 mA, -20 dB, OSA
Spectral width	$\Delta\lambda$		400	500	kHz	CW, I_{op} = 300 mA, delayed self-heterodyne method
Wavelength-temperature coeff.	$d\lambda/dT$		0.1		nm/°C	
Side-mode suppression ratio	SMSR	45			dB	CW, I_{op} = 300 mA
Threshold current	I_{th}		40	70	mA	CW
Slope efficiency	S_e	0.18	0.25		W/A	CW, SM1
Operating voltage	V_{op}		1.8	2.2	V	CW, I_{op} = 300 mA
Tracking error**	E_r				dB	CW, P = 3 mW; T = 0 ÷ +70 °C
Monitoring output current (PD)	I_m	0.02	0.5	2.0	mA	CW, I_{op} = 300 mA, V_{rd} = 5V

**Tracking error E_r = max |10 lg [P(T)/P(25°C)]|, I_m= const, T = T_{min} ÷ T_{max}

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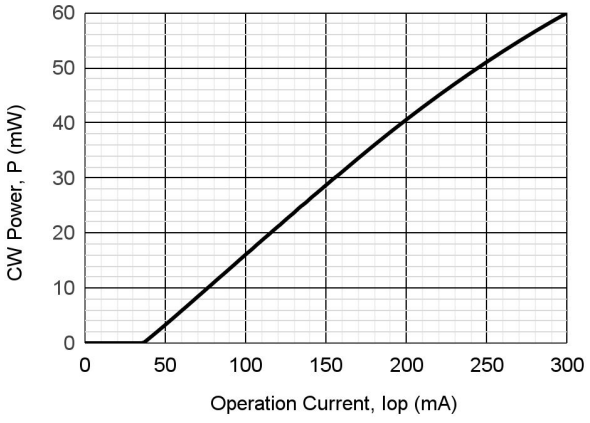

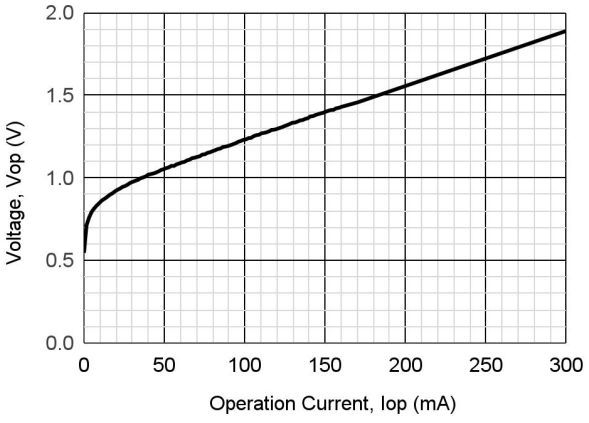

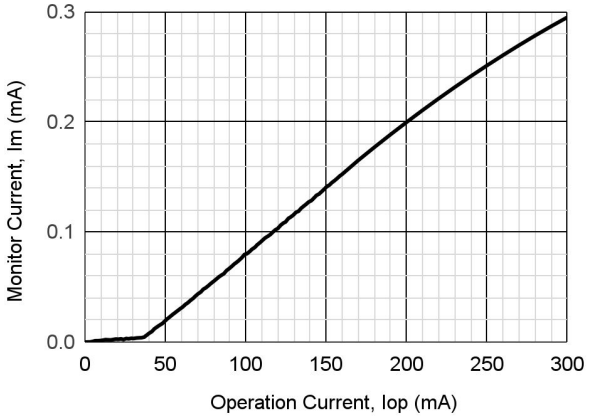

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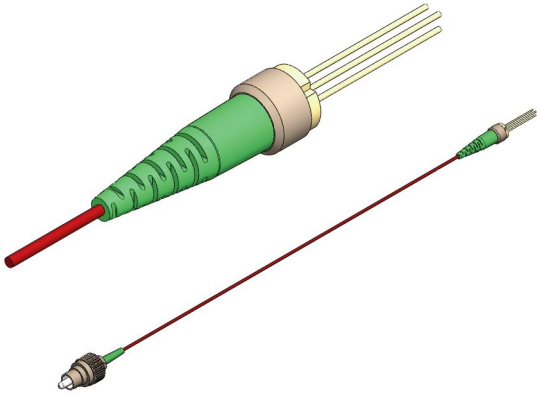
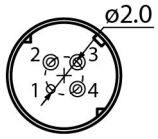


PACKAGE U

BACK VIEW



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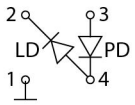
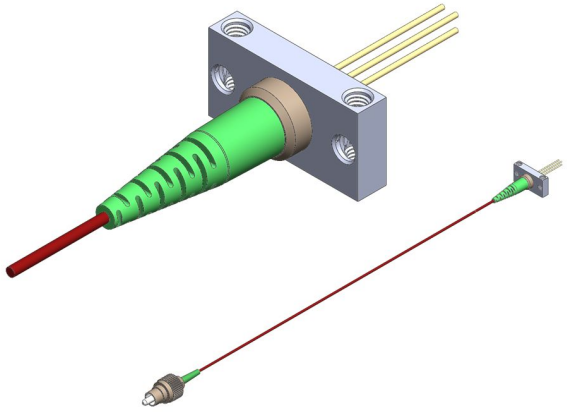


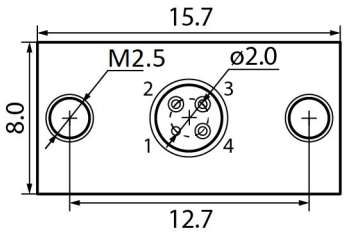
Download more information

Drawing | 3D model | Application Notes



PACKAGE B

BACK VIEW



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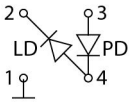

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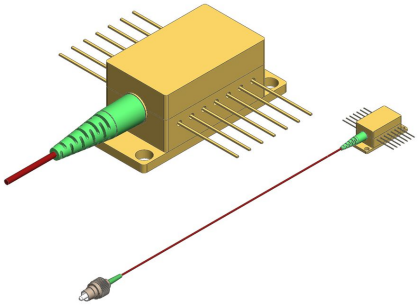
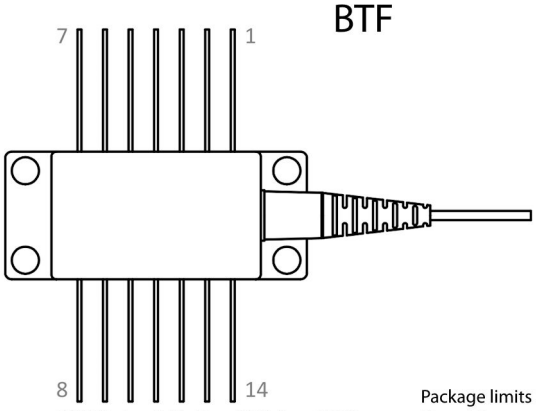


BTF



1. TEC+
2. Thermistor
3. NC
4. NC
5. Thermistor
6. NC
7. NC
8. NC
9. NC
10 LD/SLD Anode
11. LD/SLD Cathode
12. NC
13. Case Ground
14. TEC -

TEC HP: I_{max}=1.4A, U_{max}=3.9 V, Q_{max}=3.3 W,
AC R = 2.0 Ohm, ΔT_{max} = 69 K

Package limits RF bandwidth to 500 MHz
Thermistor:
Rt=10*EXP(3600*{1/T[K]-1/298}) kOhm

Download more information

Drawing | 3D model | Application Notes

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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

LasersCom LLC 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, LasersCom LLC 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, LasersCom LLC hereby states compliance of the parts and materials used in manufacturing to REACH regulation. LasersCom LLC does not manufacture or import any substances or preparations as defined under REACH.