4 - 155 Mb/s Single-Mode OSC Laser, 1510 nm LC151B

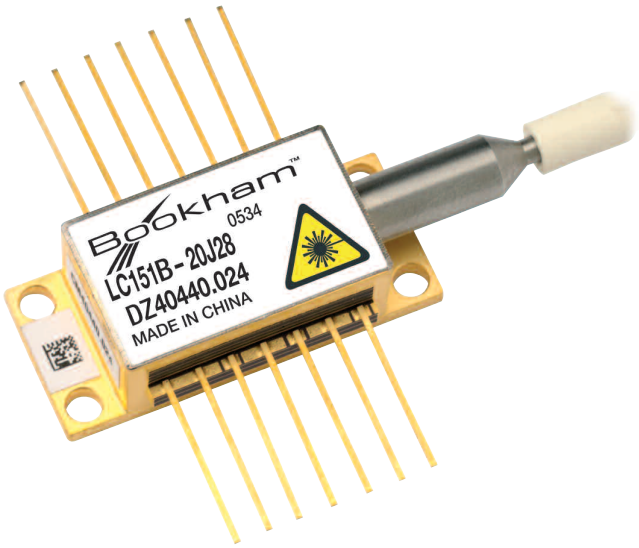
Specifically designed for use as a low speed out of band optical service channel for optical amplifiers. The laser is available in a low-inductance 14-pin butterfly package with single-mode connectorized fiber-optic pigtail with a rated peak output power of 2 mW. At 1510 nm, the LC151B-20 does not interfere with WDM traffic and operates outside the normal EDFA gain region. The high reliability buried hetero-structure DFB laser chip ensures the reliability of the LC151B-20 over the entire range of recommended operating conditions.

Features:

- Wavelength 1510 nm
- Designed to operate at 4 Mb/s - 155 Mb/s
- Low threshold, high reliability BHet laser chip
- Hermetically sealed 14 pin high speed butterfly package
- High output power 2 mW minimum CW
- Internal InGaAs monitor photodiode
- Available with several optical connector options
- RoHS compliant

Applications:

- Optical Service Channel (OSC) applications in DWDM transmission systems using optical amplifiers.



Absolute Maximum Ratings

Parameter	Conditions	Min	Max	Unit
Operating temperature		-40	+70	°C
Storage temperature		-40	+75	°C
Laser forward current above I_{th}			100	mA
Laser reverse voltage			2	V
Monitor diode bias			-10	V
Fibre bend radius		30		mm

Tcase = 25°C unless otherwise stated.

Parameters

Parameter	Condition	Min	Typ	Max	Unit
Submount temperature		25		35	°C
Threshold current (I_{th})	SOL	5		30	mA
Rated mean output power	50% duty	1.0			mW
Forward voltage	2 mW peak			2	V
Modulation current	2 mW peak	22		67	mA
Mean wavelength	10 Mb/s	1503		1518	nm
Monitor current	1 mW output	65		695	µA
Monitor dark current			5	50	nA
Heatpump current	70°C case/25°C submount			800	mA
Heatpump voltage	70°C case/25°C submount		1.3	2	V
Bandwidth		200			MHz
Sidemode suppression ratio	Rated ouput power			-35	dB
Spectral width	@ -20 dB			0.4	nm
Kink	To 120% peak	-20		20	%
Slope SAT	To 120% peak	-35		35	%

Conditions: Monitor bias -5V.

Connections

Pin #	Function	Pin #	Function
1	Thermistor	14	No connection
2	Thermistor	13	Ground
3	LD cathode	12	LD anode
4	Monitor anode	11	Ground
5	Monitor cathode	10	No connection
6	TEC (+)	9	Ground
7	TEC (-)	8	Ground

Package Outline Drawing and Dimensions

Tolerances ± 0.25 mm

Finish: Gold plate

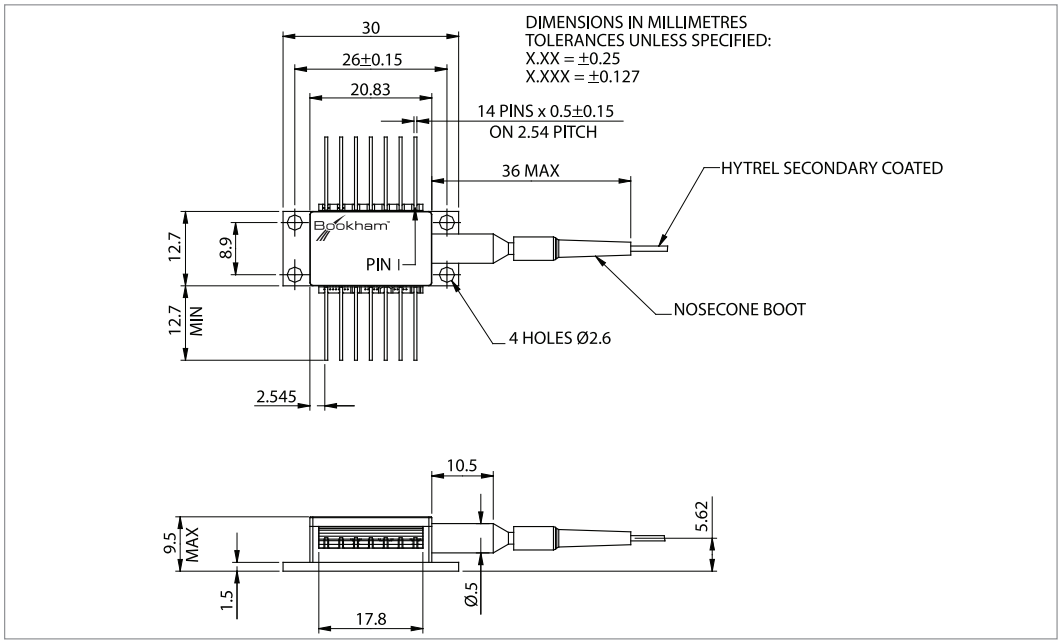


Figure 3: Dimensions diagram.

Instructions for Use

Pin 1 and Pin 2 Thermistor

The thermistor is used in a control loop in conjunction with the thermo-electric cooler to maintain the laser submount temperature at the required value. Operating current should be less than 100 µA to prevent selfheating errors.

Pin 3 Laser modulation (-) and bias

The data input (modulation) and bias are both applied via this pin which has a nominal 25 Ohm load impedance.

Pin 4 Monitor anode, Pin 5 Monitor cathode

The back facet monitor diode provides a mean power reference for the laser and is normally operated with a 5 V reverse bias.

Pin 6 TEC (+), Pin 7 TEC (-)

Applying a positive voltage on pin 6 with respect to pin 7 will cause the internal submount to be cooled relative to the case temperature.

Reversing the polarity will raise the submount temperature relative to the case. Care should be taken to avoid overheating the submount when driving the TEC in this manner.

The TEC supply should be capable of delivering up to 1.2 A at 2.5 V.

Pin 8, 9, 11, 13 Case ground.

These pins must be grounded in all applications.

Pin 10, 14 N/C

These pins are not connected. They should be grounded if possible.

Pin 12 Laser (+)

This pin provides the return path for the laser modulation and bias circuits.

RoHS Compliance

Bookham is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Ordering Information:

Please quote the Product Code from below when ordering as this is the identification that appears on the part when shipped.

Product Code	Length	Fibertail Diameter	Fibre types	Product Name
LC151B-20J28	116 cm ±30 mm	0.9 mm	standard	4/155 Mb/s Single-Mode OSC Laser, 1510 nm with SC/PC connector
LC151B-20J34	116 cm ±30 mm	0.9 mm	standard	4/155 Mb/s Single-Mode OSC Laser, 1510 nm with FC/PC connector
LC151B-20J57	116 cm ±30 mm	0.9 mm	standard	4/155 Mb/s Single-Mode OSC Laser, 1510 nm with LC/PC connector
LC151B-20J59	116 cm ±30 mm	0.9 mm	standard	4/155 Mb/s Single-Mode OSC Laser, 1510 nm with MU/PC connector

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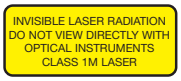

REFERENCE IEC 60825-1: Edition 1.2

THIS PRODUCT COMPLIES WITH 21 CFR 1040.10

ISO14001:1996
EMS 504193
TL9000 Rev 3.0 (ISO9001:2000)
FM15040

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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