OL5104L-20
Laser Diode Butterfly Module
1550 nm/20 mW

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Oki Semiconductor

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DFB Laser Diode Butterfly Module

INTRODUCTION

The OL5104L-20 is a high power, distributed-feedback (DFB) laser diode module that operates at a wavelength of 1550 nm. It is available in a 14-pin “butterfly” package which is pigtail-equipped, and provides fiber output power of 20 mW. Oki’s OL5104L-20 has a built-in isolator, thermistor, monitor photodiode, and thermo-electric cooler.

FEATURES

- 14-pin “butterfly” package
- 20 mW high-power output
- Built-in isolator
- Built-in thermo-electric cooler (TEC) and Thermistor
- 1550 nm wavelength
- Photodiode monitor
- Single-mode fiber

APPLICATION

- Long-haul transmission systems
- Service channel laser
- Free-air point to point transmission

ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings

(T_A = 25 ˚C) unless specified otherwise

Parameter	Condition	Symbol	Ratings	Unit
Fiber Output Power	T(LD) = 25°C	Pf	25	mW
Operating Temperature	-	Topr	0 to +65	°C
Storage Temperature	-	Tstg	-20 to +75	°C
Laser Diode Forward Current	T(LD) = 25°C	If(LD)	180	mA
Laser Diode Reverse Voltage	T(LD) = 25°C	Vr(LD)	2	V
Photo Diode Reverse Voltage	T(LD) = 25°C	Vr(PD)	20	V
Photo Diode Forward Current	T(LD) = 25°C	If(PD)	10	mA
Cooler Current	T(LD) = 25, ΔT = 40°C	Ic	1.2	A
Cooler Voltage	T(LD) = 25, ΔT = 40°C	Id	2.4	V
Lead Soldering Temperature	t = 10 sec	Tlead	260	°C
Fiber Bend Radius	-	Fbr	40	mm

Exceeding these maximum ratings could cause immediate damage or lead to permanent deterioration of the device.

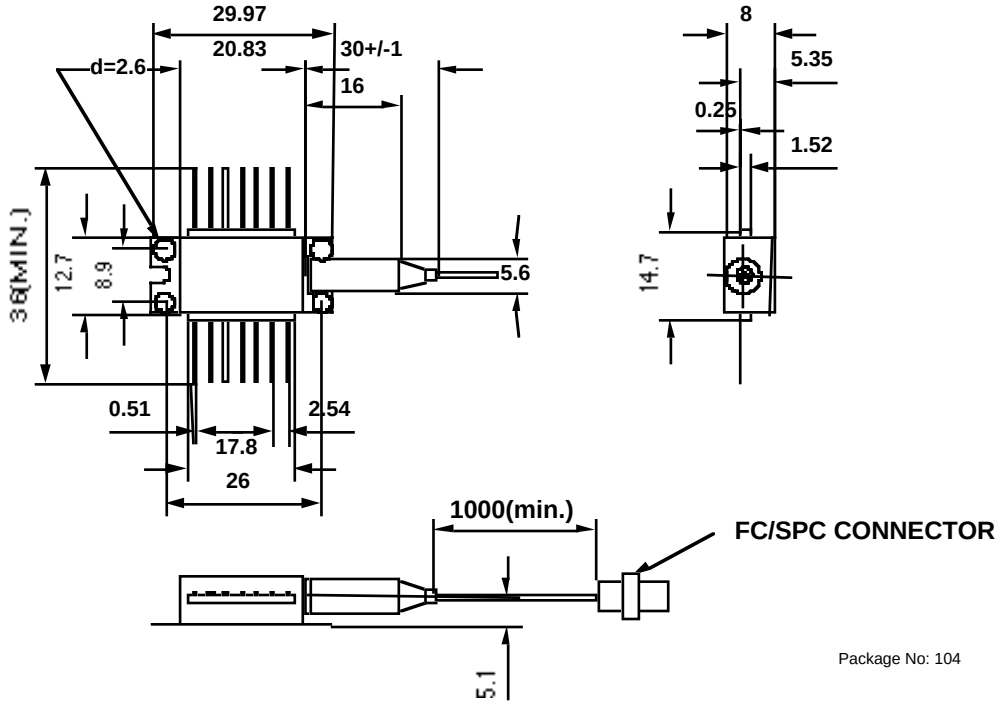
Optical and Electrical Characteristics

(T_{LB} = 25 ˚C) unless specified otherwise

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Threshold Current	Ith	-	-	-	35	mA
Laser Operating Current	Iop	Pf = 20 mW	-	-	150	mA
Laser Forward Voltage	Vf	Pf = 20 mW	-	-	2	V
Peak Wavelength	λp	Pf = 20 mW		TBD		nm
Spectral line Width	Δλ	Pf = 20 mW,-3 dB	-	-	30	MHz
Side Mode Suppression Ratio	SMSR	Pf = 20 mW	30	-	-	dB
Monitor Dark Current	Idark	Vr(PD) = 5 V	-	-	100	nA
Monitor Current	Im	Pf = 20 mW, Vr(PD) = 5 V	50	-	-	μA
Cooler Capacity	ΔT	Pf = 20 mW	40	-	-	°C
Cooler Current	Ic	ΔT = 40°C, Pf = 20 mW	-	-	1.2	A
Cooler Voltage	Vc	ΔT = 40°C, Pf = 20 mW	-	-	2.4	V
Thermistor Resistance	Rth	T_{LD} = 25°C	9.5	-	10.5	kW
Optical Isolation	ISO	Tcase = 0 to 65°C	30	-	-	dB

PACKAGE DIMENSIONS

units in mm



Package No: 104

Pin Configuration

Pin No.	Description
1	Thermistor
2	Thermistor
3	LD Cathode
4	PD Anode
5	PD Cathode
6	TEC +
7	TEC -

Pin No.	Description
8	GND
9	GND
10	NC
11	LD Anode/GND
12	LD RF
13	GND
14	NC

Connector and Fiber Pigtail Specifications

Parameter	Specifications	Unit
Fiber Type	Single mode	-
Mode Field Diameter	9.3	µm
Cladding Diameter	0.9	mm
Jacket Diameter	900	µm
Length	1000+/-50	mm
Connector	FC/SPC	-

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