OL4128N-160
High-Power Pump Laser Diode Butterfly Module (1480 nm)

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Oki Semiconductor

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INTRODUCTION

Oki Semiconductor's OL4128N-160 is a 160 mW, 1480-nm, high-power laser diode and is available in a 14-pin "butterfly" package designed for high-performance fiber-optic applications. The OL4128N-160 diode has a built-in thermo-electric cooler, thermistor, and isolator, and has a single-mode fiber pigtail.

The OL4121N-160 diode can be used as a pumping source for Er- (erbium) doped fiber-optic amplifiers in Dense Wavelength Division Multiplex (DWDM-EDFA) systems and long-haul terrestrial networks.

FEATURES

- Fiber output power: Pf=160 mW
- 14-pin "butterfly" package
- Single-mode fiber
- Built-in isolator
- Includes photodiode for power monitoring
- Built-in thermo-electric cooler (TEC)

APPLICATION

- DWDM / WDM fiber optic systems
- Erbium-doped fiber amplifiers
- Regeneration of data
- Fiber-optic long-haul terrestrial networks

ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings

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

Parameter	Symbol	Ratings	Unit
Fiber Output Power	Pf	192	mW
Laser Diode Forward Current	If(LD)	800	mA
Laser Diode Reverse Voltage	Vr(LD)	2	V
Photo Diode Reverse Voltage	Vr(PD)	12	V
Operating Temperature	Topr	0 to +70	ºC
Storage Temperature	Tstg	-40 to +85	ºC
TEC Current	Ic	2.3	A
TEC Voltage	Vc	5.0	V

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

Optical and Electrical Characteristics

(T_{LD} = 25ºC,Tcase = 0 to 70 ˚C) unless specified otherwise

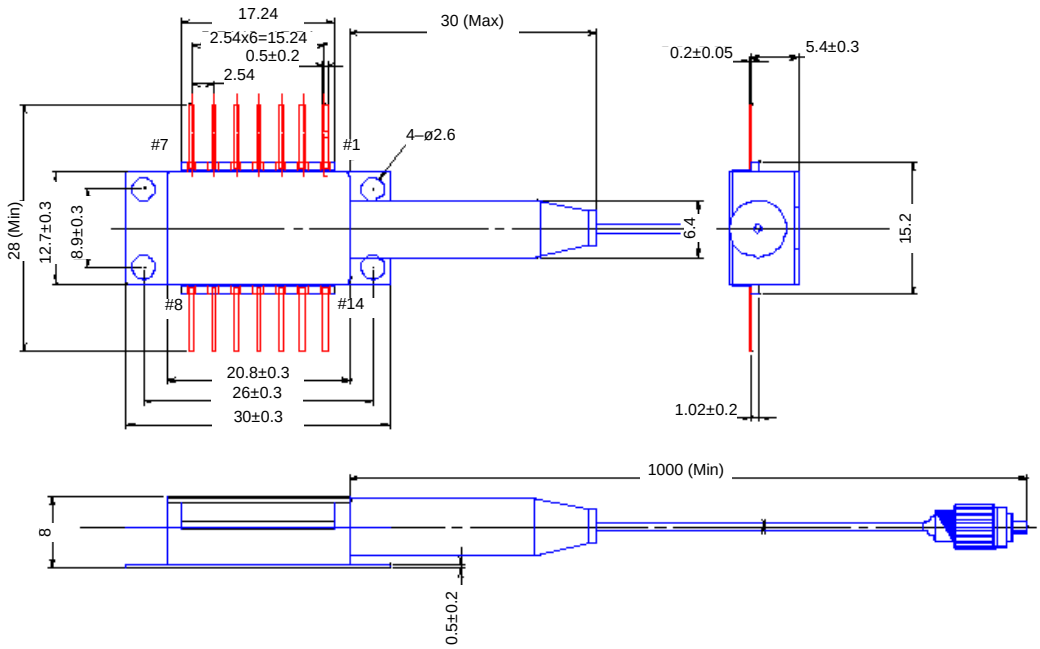
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Threshold Current (BOL)	Ith	---	---	---	50	mA
Operating Current (BOL)	$Iop_{(BOL)}$	Pf = 160 mW	---	---	600	mA
Operating Current (EOL)	$Iop_{(EOL)}$	---	---	---	$Iop_{(BOL)}$ x 1.2	mA
Operating Voltage	Vop	If = Iop	---	---	3.0	V
Center Wavelength	λc	CW, If = Iop	1460	---	1490	nm
RMS Spectral Width	σ	If = Iop, RMS	---	---	10	nm
Tracking Error	TER	Im = const., 0/25/70°C	---	---	+/-0.5	dB
PD Dark Current	Idark	Vr(PD) = 5 V	---	---	100	nA
Monitor Current	Im	Pf = 160 mW, Vr(PD) = 5 V	100	---	---	μA
TEC Capacity	ΔT	CW, If = Iop	45	---	---	°C
TEC Current	Ic	ΔT = 45°C, Tcase = 70°C, If = $If_{(BOL)}$ x 1.2	---	---	2.0	A
TEC Voltage	Vc	ΔT = 45°C, Tcase = 70°C, If = $If_{(BOL)}$ x 1.2	---	---	4.6	V
Thermistor Resistance	Rth	T_{LD} = 25ºC	9.5	---	10.5	kΩ

Fiber Pigtail Specifications

Parameter	Specifications	Unit
Type	SM	---
Mode Field Diameter	10+/-1	µm
Cladding Diameter	125+/-2	µm
Jacket Diameter	900	µm
Length	1.0 (Min.)	m
Connector	FC/SPC	---

PACKAGE DIMENSIONS

Pkg No. 128
Units in mm, tolerances unless noted ±5 mm



Pin Configuration

Pin No.	Description
1	TEC (+)
2	Thermistor
3	Monitor Anode
4	Monitor Cathode
5	Thermistor
6	NC
7	NC

Pin No.	Description
8	NC
9	NC
10	LD Anode
11	LD Cathode
12	NC
13	GND
14	TEC (-)

Oki Regional Sales Offices

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