

## CWDM DFB 2.5G Laser Diode With LC TOSA

Data Sheet

OLD3458-XXD1-LTO

### Features

- Uncooled
- Single Isolator
- Type C laser
- Low threshold current
- Power Output: 2 mW
- 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610nm
- InGaAsP/ InP MQW-DFB laser diode
- High speed InGaAs monitor PIN photodiode
- Packaged in LC TOSA with fiber stub
- Operating Temperature: 0 ~ +70°C

### Applications

- Digital Signal Transmission
- Telecommunications (Local loop, interoffice and intraoffice)
- Data Communications
- SONET OC-3, OC-12, OC-48/SDH STM-1, STM-4, STM-16
- Gigabit Ethernet

### Description

The OLD3458-XXD1-LTO is a hermetically sealed CWDM InGaAsP/ InP DFB laser diode module in a small TOSA type package, including a high speed InGaAs PIN monitor photodiode and packaged in LC TOSA with fiber stub. It also comes with a single isolator.

The laser diode is designed for use in data communications systems and telecommunications systems over singlemode fiber, and can operate in temperatures of 0°C to +70°C. The laser diode module transmits emission power to the monitor photodiode in the rear, which ensures highly stable emission at specific wavelengths of 1470-1610nm.

**Safety**

Radiation emitted by laser diode devices can be dangerous to the eyes. Avoid direct or scattered radiation exposure to the eyes or skin. Device contains gallium arsenide (GaAs) which can be hazardous to your health. Please embrace all customary precautions and discretion while handling this device. Observe governmental laws and regulations when discarding this device.

**Performance Specifications**

**Absolute Maximum Ratings**

Stresses in excess of the absolute maximum ratings can cause damage to the optical device. Operations of the optical device are suggested to remain within the recommended operating conditions. Exposure to the absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Value	Unit
Storage Temperature	$T_{stg}$	-40 to +85	$^{\circ}C$
Operating Case Temperature	$T_{op}$	0 to +70	$^{\circ}C$
Peak Optical Output Power	$P_o$	8	mW
Forward Current (LD)	$I_{FLD}$	150	mA
Reverse Voltage (LD)	$V_{RLD}$	2	V
Reverse Current (PD)	$I_{RPD}$	2	mA
Reverse Voltage (PD)	$V_{RPD}$	15	V
Soldering Temperature	$S_{temp}$	260	$^{\circ}C$
Soldering Time	$S_{time}$	10	sec

**Electrical and Optical Characteristics ( $T_C=25^{\circ}C$  unless otherwise noted)**

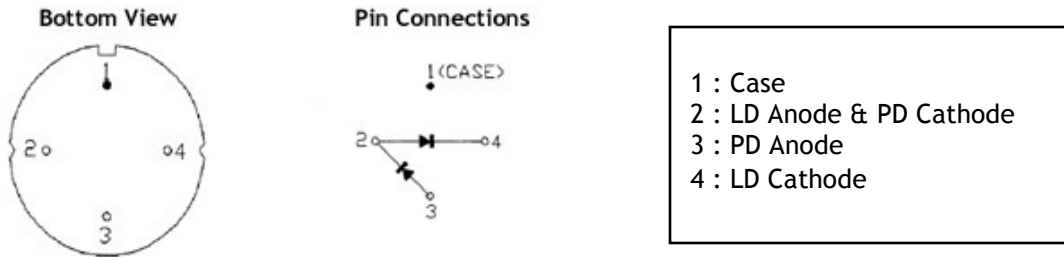
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Threshold Current	$I_{th}$	CW	-	10	15	mA
		CW, $T_C=0-70^{\circ}C$	-	-	50	
Operating Voltage	$V_{op}$	CW, Pop, $T_C=0-70^{\circ}C$	-	1.2	1.6	V
Operating Current	$I_{op}$	Pop=2.0mW	-	30	40	mA
Peak Wavelength	$\lambda_p$	CW, Pop	$\lambda_p - 3.0$	$\lambda_p$	$\lambda_p + 3.0$	nm
		CW, Pop, $T_C=0-70^{\circ}C$	$\lambda_p - 5.5$	$\lambda_p$	$\lambda_p + 7.5$	
Side-mode Suppression Ratio	SMSR	CW, Pop, $T_C=0-70^{\circ}C$	30	-	-	dB
Rise Time	$T_r$	$I_b=I_{th}$ , 20%-80%, $T_C=0-70^{\circ}C$	-	-	0.25	ns
Fall Time	$T_f$	$I_b=I_{th}$ , 20%-80%, $T_C=0-70^{\circ}C$	-	-	0.30	ns
Monitor Current	$I_m$	Pop, $V_{rp}=5V$	0.08	0.5	-	mA
Monitor Dark Current	$I_d$	$V_{rp}=5V$	-	-	10	nA
		$V_{rp}=5V$ , $T_C=0-70^{\circ}C$	-	-	100	
Monitor Capacitance	C	$V_{rp}=5V$ , $f=1MHz$	-	-	10	pF
Optical Isolation	OS	CW, Pop=2.0mW, $T_C=0-70^{\circ}C$	20	-	-	dB
Tracking Error	-	APC, 0 to +70 $^{\circ}C$	-	-	$\pm 1.5$	dB

Note:

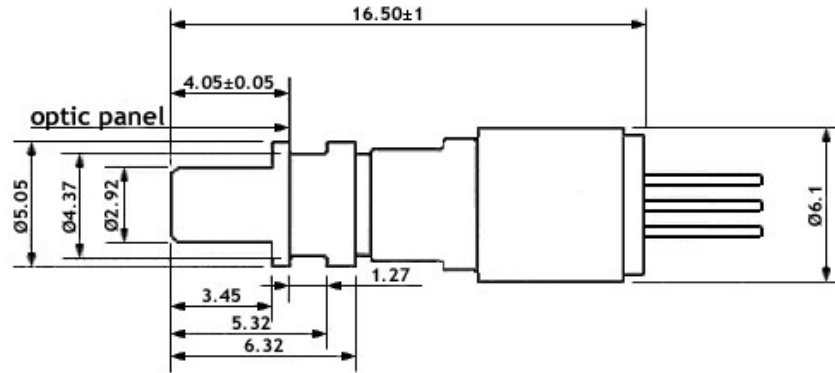
- $\lambda_p = \lambda_{47}, \lambda_{49}, \lambda_{51}, \lambda_{53}, \lambda_{55}, \lambda_{57}, \lambda_{59}, \lambda_{61}$

**Package Outline Diagram**

Dimensions for the device package are given in millimeters.



- 1 : Case
- 2 : LD Anode & PD Cathode
- 3 : PD Anode
- 4 : LD Cathode



**Additional Information**

**Ordering Information**

Center Wavelength	Part Number
1470 nm	OLD3458-47D1
1490 nm	OLD3458-49D1
1510 nm	OLD3458-51D1
1530 nm	OLD3458-53D1
1550 nm	OLD3458-55D1
1570 nm	OLD3458-57D1
1590 nm	OLD3458-59D1
1610 nm	OLD3458-61D1

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