

# 1550 nm DFB 2.5G Laser Diode Module With Pigtail Connection and FC/PC

Data Sheet

OLD3458-C4-FC

## Features

- Uncooled
- Type C laser
- Low threshold current
- Output power: 2mW
- Data Rate: 2.5 Gbps
- 1550nm DFB laser diode
- SMF Pigtailed
- InGaAs monitor PIN photodiode
- Single mode fiber pigtailed with FC/PC connector
- Operating Temperature: -20~ +85°C

## Applications

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

## Description

The OLD3458-C4-FC is a hermetically sealed InGaAsP/ InP DFB laser diode module in a small coaxial type package, including a high speed InGaAs PIN monitor photodiode and single mode fiber pigtail connection.

The laser diode is designed for use in data communications systems and telecommunications systems over single mode fiber, and can operate in temperatures of -20°C to 85°C. The laser diode module transmits emission power to the monitor photodiode in the rear, which ensures highly stable emission at a wavelength of 1550 nm.

**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	°C
Operating Case Temperature	$T_{op}$	-20 to +85	°C
Peak Optical Output Power	$P_o$	5	mW
Forward Current (LD)	$I_{FLD}$	120	mA
Reverse Voltage (LD)	$V_{RLD}$	2	V
Reverse Current (PD)	$I_{RPD}$	2	mA
Reverse Voltage (PD)	$V_{RPD}$	10	V
Soldering Temperature	$S_{temp}$	260	°C
Soldering Time	$S_{time}$	10	sec

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

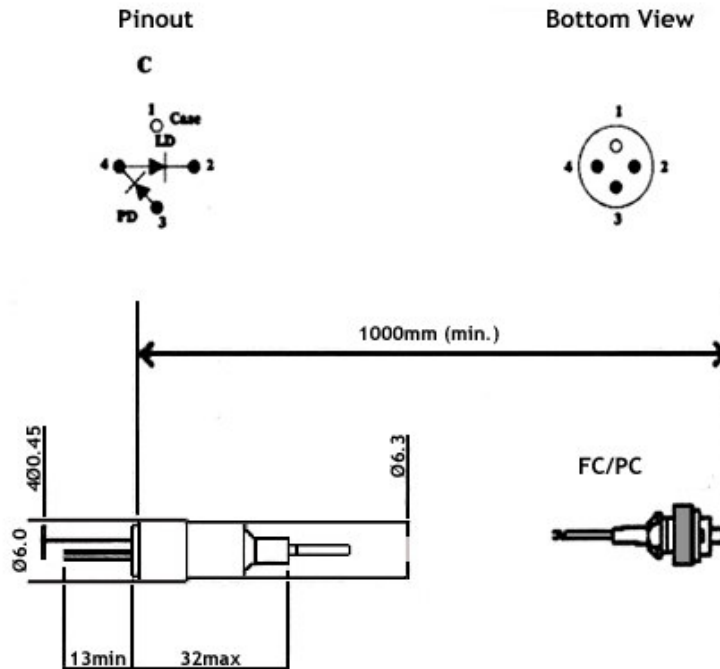
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Threshold Current	$I_{th}$	CW	-	12	18	mA
		CW, $T_c=-20-85^\circ\text{C}$	-	35	50	
Operating Voltage	$V_{op}$	CW, Pop, $T_c=-20-85^\circ\text{C}$	-	1.1	1.6	V
Operating Current	$I_{op}$	Pop=2.0mW	-	25	35	mA
		Pop=2.0mW, $T_c=-20-85^\circ\text{C}$	-	35	60	
Peak Wavelength	$\lambda_p$	Pop=2.0mW	1530	1550	1570	nm
Spectral Width (-20dB)	$\Delta\lambda$	Pop=2.0mW	-	0.1	1.0	nm
Wavelength Temp Coefficient	$\Delta\lambda/\Delta T$		-	0.09	-	nm
Side-mode Suppression Ratio	SMSR	Pop=2.0mW	30	40	-	dB
Rise Time/ Fall Time	$T_r / T_f$	$I_b=I_{th}$ , 20%-80%	-	-	0.2	ns
Monitor Current	$I_m$	Pop, $V_{rp}=5V$	25	-	375	uA/mW
Monitor Dark Current	$I_d$	$V_{rp}=5V$ , $T_c=-20-85^\circ\text{C}$	-	-	200	nA
Tracking Error	-	APC, -20 to +85° C	-	±0.5	±1.0	dB
Optical Isolation	ISO		30	-	-	dB

**RF Characteristics (T<sub>c</sub>=25 °C)**

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Relative Intensity Noise	PIN	CW, Pop=2.0mW, f=50M-1000MHz	-	-	-145	dB/Hz
Modulation Bandwidth	BW	-3dB, Pop=2.0mW	2.5	-	-	GHz
Second-Order Intermodulation	IMD2	Pop=2.0mW, OMI=0.1, Two-tone test, 874.5MHz & 875.5MHz	-	-	-46	dBc
Third-Order Intermodulation	IMD3	Pop=2.0mW, OMI=0.1, Two-tone test, 874.5MHz & 875.5MHz	-	-	-60	dBc
RF Bandpass Flatness	BF	Peak to Valley, 50M-1000MHz	-	-	1.0	dB

**Package Outline Diagram**

Dimensions for the device package are given in millimeters.



**Additional Information**

**Contact**

For additional information, product specifications, or information about Optocom:

Internet: <http://www.optocom.com>  
 Email: [sales@optocom.com](mailto:sales@optocom.com)  
 Tel: +1 978 988 8711  
 Fax: +1 978 988 8722

©2005 Optocom Corporation. All rights reserved. Information in this document is believed to be accurate and reliable and is subject to change without notice. Optocom Corporation will not be held liable for technical or editorial errors or omissions contained herein. Reproduction in whole or in part is prohibited without prior written consent of the copyright owner and no responsibility will be assumed by Optocom Corporation for any infringements of third parties. All other brand or product names mentioned are the trademarks or registered trademarks owned by their respective companies or organizations.