

NDL7513P Series

InGaAsP STRAINED MQW DC-PBH PULSED LASER DIODE MODULE
1310nm OTDR APPLICATION

DESCRIPTION

NDL7513P Series is a 1310nm newly developed Strained Multiple Quantum Well (st-MQW) structure pulsed laser diode coaxial module with singlemode fiber. It is designed for light source of optical measurement equipment (OTDR).

FEATURES

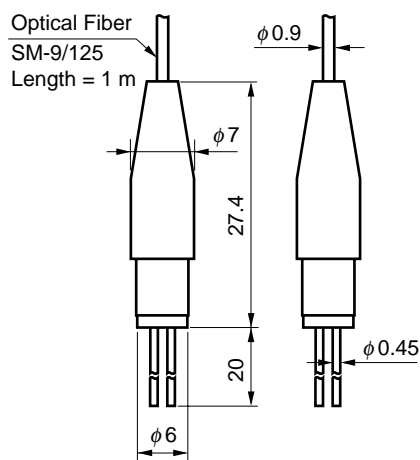
- High output power $P_f = 110 \text{ mW} @ I_{FP} = 400 \text{ mA}^{*1}$
- Long wavelength $\lambda_c = 1310 \text{ nm}$
- Coaxial module without thermoelectric cooler.
- Singlemode fiber pigtail

*1 Pulse Conditions: Pulse width (PW) = 10 μs , Duty = 1 %

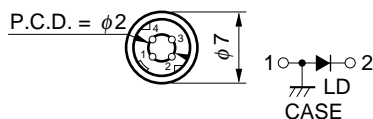
PACKAGE DIMENSIONS

in millimeters

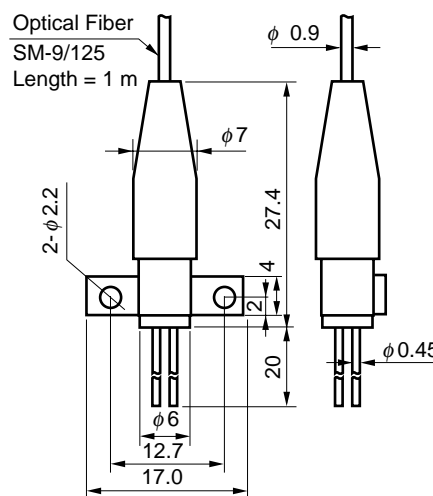
NDL7513P



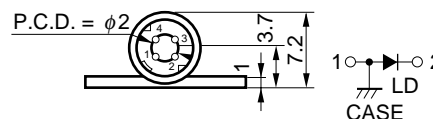
PIN CONNECTIONS



NDL7513P1



PIN CONNECTIONS



The information in this document is subject to change without notice.

ORDERING INFORMATION

Part Number	Available Connector	Flange Type
NDL7513P	Without Connector	no flange
NDL7513PC	With FC-PC Connector	
NDL7513PD	With SC-PC Connector	
NDL7513P1	Without Connector	flat mount flange
NDL7513P1C	With FC-PC Connector	
NDL7513P1D	With SC-PC Connector	

ABSOLUTE MAXIMUM RATINGS (T_c = 25 °C)

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current ^{*1}	I _{FP}	600	mA
Reverse Voltage	V _R	2.0	V
Operating Case Temperature	T _c	-20 to +60	°C
Storage Temperature	T _{stg}	-40 to +85	°C
Lead Soldering Temperature (10 sec)	T _{slid}	260	°C

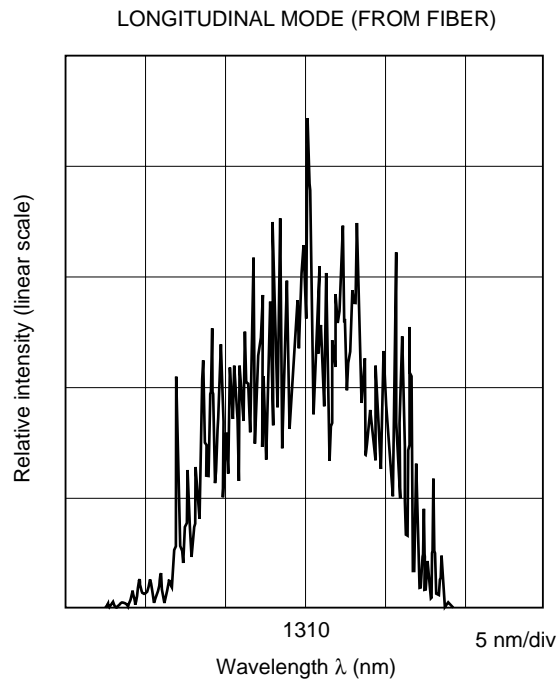
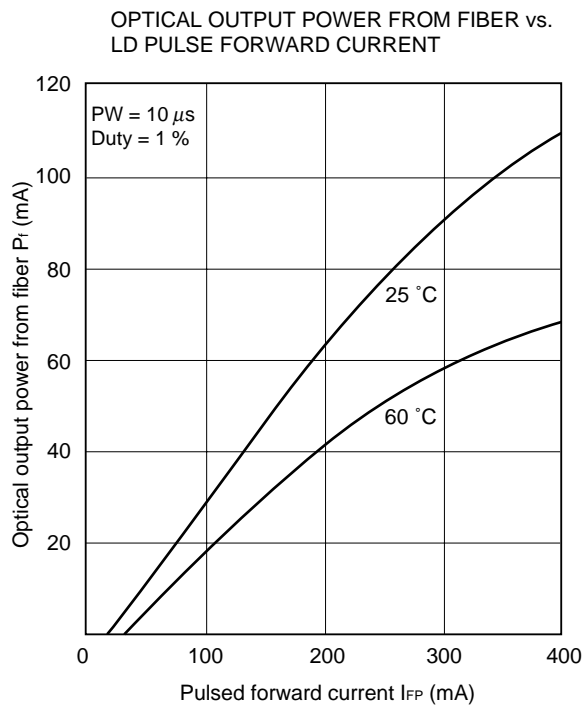
*1 Pulse Condition: Pulse Width (PW) = 10 μs, Duty = 1 %

ELECTRO-OPTICAL CHARACTERISTICS (T_c = 25 °C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V _{FP}	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %		2.5	4.0	V
Threshold Current	I _{th}			20	30	mA
Optical Output Power from Fiber	P _f	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %	70	110		mW
RMS Center Wavelength	λ _c	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %	1290	1310	1330	nm
RMS Spectral Width	σ	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %		4.5	10.0	nm
Rise Time	t _r	10 - 90 %			1.0	ns
Fall Time	t _f	90 - 10 %			1.0	ns

ELECTRO-OPTICAL CHARACTERISTICS (T_c = 0 to +60°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold Current	I _{th}				50	mA
Optical Output Power from Fiber	P _f	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %	50			mW
RMS Center Wavelength	λ _c	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %	1280		1342.5	nm
Temperature Dependency of Center Wavelength	Δλ/ΔT			0.35		nm/°C
RMS Spectral Width	σ	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %			10	nm



LASER DIODE FAMILY FOR OTDR APPLICATION

Features Package	1.3 μm		1.5 μm		I_{FP}^{*1}	Remarks
	Part Number	P (mW) MIN./TYP.	Part Number	P (mW) MIN./TYP.		
$\phi 5.6$ CAN	NDL7103	290/320	NDL7153	220/240	1000	
	NDL7113	160/175	NDL7163	100/120	400	
4 pin Coaxial Module with SMF	NDL7503P/P1	110/180	NDL7553P/P1	95/145	1000	P : no flange P1 : with flange
	NDL7513P/P1	70/110	NDL7563P/P1	60/80	400	
	NDL7514P/P1	25/50	NDL7564P/P1	20/40	400	
	NDL7515P/P1	20/30	NDL7565P/P1	8/11	400	
14 pin DIP Module with SMF	NDL7502P	125/190	NDL7552P	100/125	1000	with TEC and Thermistor
	NDL7512P	90/110	NDL7562P	70/80	400	
	NDL7510P	40/55	NDL7560P	20/30	400	

*1 Pulse conditions: pulse width = 10 μs , duty = 1 % (modules)
pulse width = 1 μs , duty = 1 % ($\phi 5.6$ can)

REFERENCE

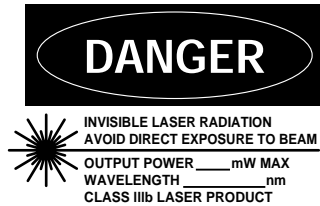
Document Name	Document No.
NEC semiconductor device reliability/quality control system	LEI-1201
Quality grades on NEC semiconductor devices	C11531E
Semiconductor device mounting technology manual	C10535E
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	X10679E

[MEMO]

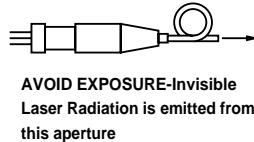
[MEMO]

CAUTION

Within this module there exists GaAs (Gallium Arsenide) material which is a harmful substance if ingested. Please do not under any circumstances break the hermetic seal.



SEMICONDUCTOR LASER



NEC Corporation
NEC Building, 7-1, Shiba 5-chome,
Minato-ku, Tokyo 108-01, Japan

Type number: _____

Manufactured: _____

Serial Number: _____

This product conforms to FDA
regulations as applicable
to standards 21 CFR Chapter 1.
Subchapter J.

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NEC devices are classified into the following three quality grades:

"Standard", "Special", and "Specific". The Specific quality grade applies only to devices developed based on a customer designated "quality assurance program" for a specific application. The recommended applications of a device depend on its quality grade, as indicated below. Customers must check the quality grade of each device before using it in a particular application.

Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

The quality grade of NEC devices is "Standard" unless otherwise specified in NEC's Data Sheets or Data Books. If customers intend to use NEC devices for applications other than those specified for Standard quality grade, they should contact an NEC sales representative in advance.

Anti-radioactive design is not implemented in this product.