

LASER DIODE
NDL7565P Series**InGaAsP MQW DC-PBH PULSED LASER DIODE MODULE**
1 550 nm OTDR APPLICATION**DESCRIPTION**

The NDL7565P Series is a 1 550 nm newly developed Multiple Quantum Well (MQW) structure pulsed laser diode module with single mode fiber. It is designed for light source of optical measurement equipment (OTDR).

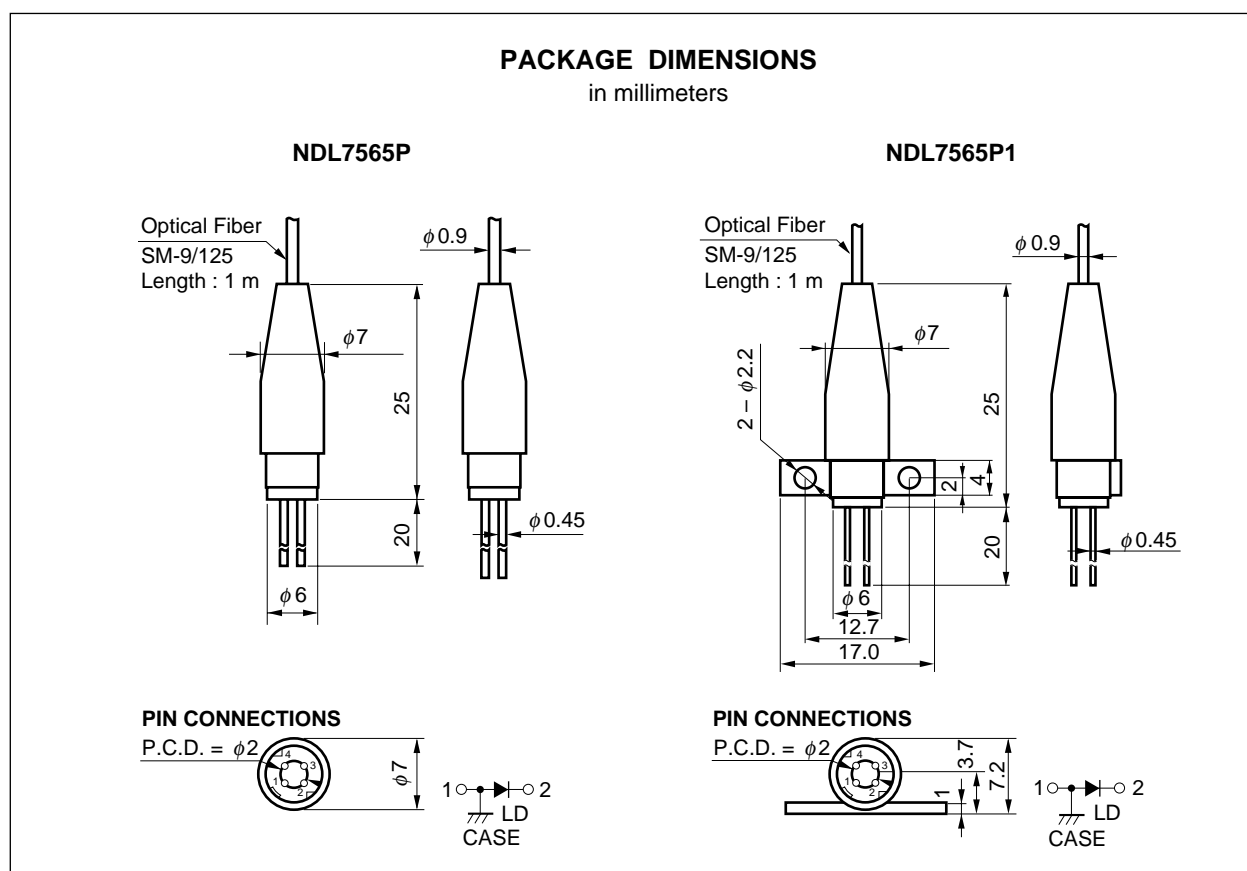
FEATURES

- Output power $P_f = 8 \text{ mW MIN. @ } I_{FP} = 400 \text{ mA, } T_c = 25 \text{ }^\circ\text{C}^{*1}$
- Long wavelength $\lambda_c = 1 550 \text{ nm}$
- Coaxial module without thermoelectric cooler
- Single mode fiber pigtail

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

PACKAGE DIMENSIONS

in millimeters



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

ORDERING INFORMATION

Part Number	Available Connector	Flange Type
NDL7565P	Without Connector	No Flange
NDL7565PC	With FC-PC Connector	
NDL7565P1	Without Connector	Flat Mount Flange
NDL7565P1C	With FC-PC Connector	

ABSOLUTE MAXIMUM RATINGS (T_c = 25 °C, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current ^{*1}	I _{FP}	600	mA
Reverse Voltage of LD	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 s)	T _{sld}	260	°C

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

ELECTRO-OPTICAL CHARACTERISTICS (T_c = 25 °C)

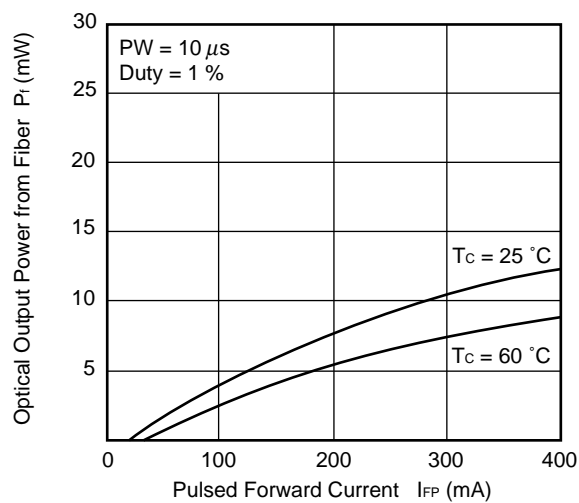
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V _{FP}	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %		2.5	4.0	V
Threshold Current	I _{th}			20	30	mA
Optical Output Power from Fiber	P _f	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %	8	11		mW
Center Wavelength	λ _c	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %, RMS (−20 dB)	1 530	1 550	1 570	nm
Spectral Width	σ	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %, RMS (−20 dB)			10	nm
Rise Time	t _r	10 to 90 %			1.0	ns
Fall Time	t _f	90 to 10 %			1.0	ns

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

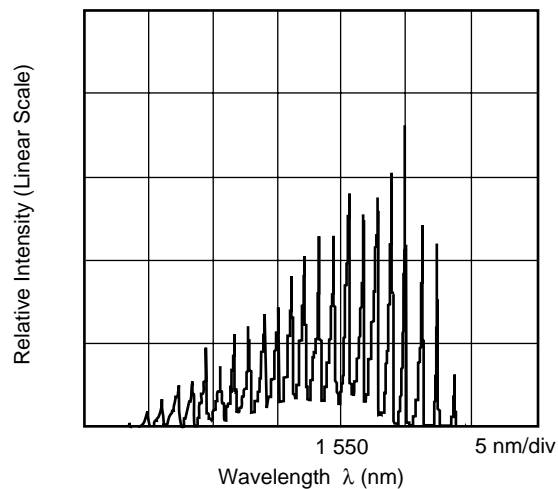
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold Current	I _{th}				50	mA
Optical Output Power from Fiber	P _f	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %	4			mW
Center Wavelength	λ _c	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %, RMS (−20 dB)	1 520		1 585	nm
Temperature Dependence of Center Wavelength	Δλ/ΔT			0.35		nm/°C
Spectral Width	σ	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %, RMS (−20 dB)			10	nm

★ TYPICAL CHARACTERISTICS ($T_c = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

OPTICAL OUTPUT POWER FROM FIBER vs.
LD PULSED FORWARD CURRENT



LONGITUDINAL MODE (FROM FIBER)



★ LASER DIODE FAMILY FOR OTDR APPLICATION

Features Packages	1.31 μm		1.55 μm		I_{FP}^{*1} (mA)	Remarks
	Part Number	P (mW) MIN./TYP.	Part Number	P (mW) MIN./TYP.		
ϕ 5.6 Can	NDL7103	290/320	NDL7153	220/240	1 000	
	NDL7113	160/175	NDL7163	100/120	400	
4-pin Coaxial Module with SMF	NDL7503P/P1	110/180	NDL7553P/P1	95/145	1 000	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	1 000	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 % (ϕ 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 device 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



AVOID EXPOSURE-Invisible
Laser Radiation is emitted from
this aperture

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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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.

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Anti-radioactive design is not implemented in this product.