NEC

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).

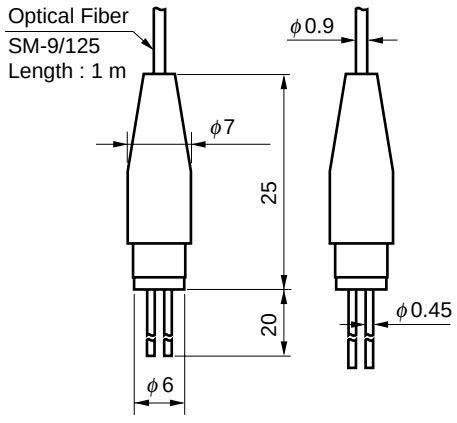
FEATURES

- Output power P_f = 8 mW MIN.@I_{FP} = 400 mA, T_C = 25 °C[*1]
- Long wavelength λ_C = 1 550 nm
- Coaxial module without thermoelectric cooler
- Single mode fiber pigtail

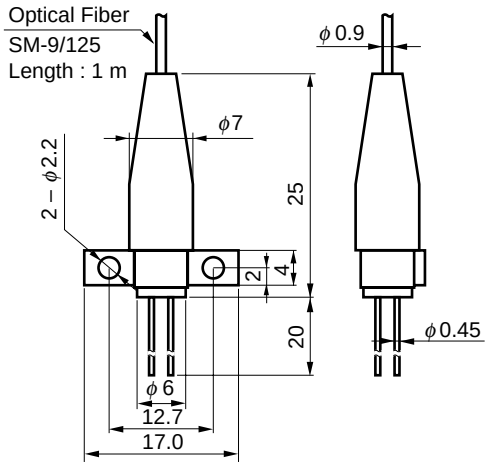
***1** Pulse conditions: Pulse width (PW) = 10 μs, Duty = 1 %

PACKAGE DIMENSIONS
in millimeters

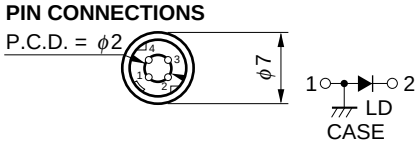
NDL7565P



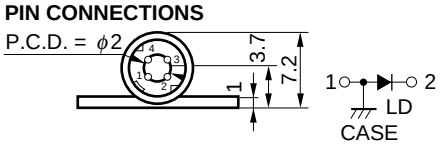
NDL7565P1



PIN CONNECTIONS



PIN CONNECTIONS



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

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The mark ★ shows major revised points.

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ORDERING INFORMATION

Part Number	Available Connector	FIange 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)

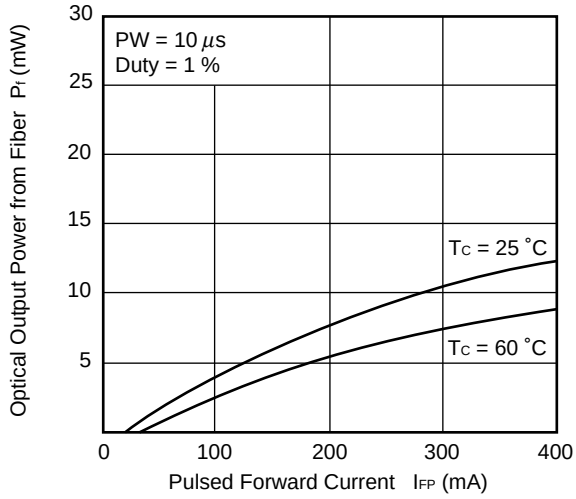
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V_{FP}	I_{FP} = 400 mA, PW = 10 μs, Duty = 1 %		2.5	4.0	V
Threshold Current	I_{th}			20	30	mA
Optical Output Power from Fiber	P_f	I_{FP} = 400 mA, PW = 10 μs, Duty = 1 %	8	11		mW
Center Wavelength	λ_C	I_{FP} = 400 mA, PW = 10 μs, Duty = 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)

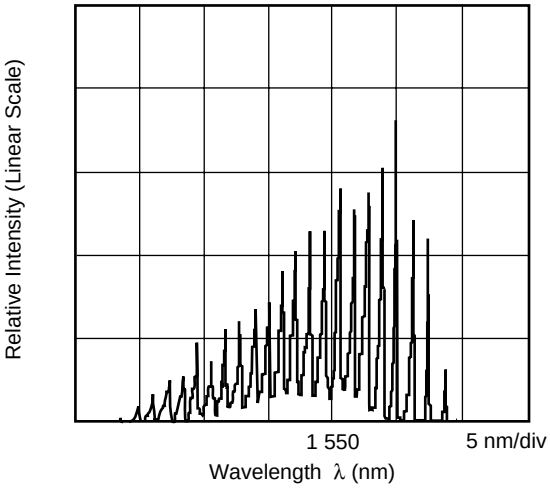
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold Current	I_{th}				50	mA
Optical Output Power from Fiber	P_f	I_{FP} = 400 mA, PW = 10 μs, Duty = 1 %	4			mW
Center Wavelength	λ_C	I_{FP} = 400 mA, PW = 10 μs, Duty = 1 %, RMS (–20 dB)	1 520		1 585	nm
Temperature Dependence of Center Wavelength	$\Delta\lambda/\Delta T$			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 °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

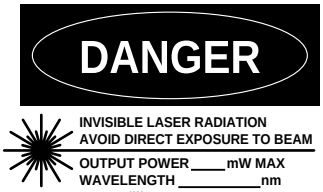
Document Name	Document No.
NEC semiconductor device reliability/quality control system	LEI-1201
Quality grades on NEC semiconductor devices	C11531E
Semiconductor device mounting technology manual	C10535E
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	X10679E

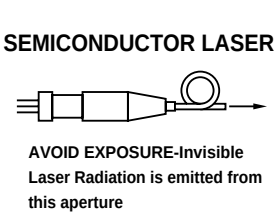
[MEMO]

[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.





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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.

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Anti-radioactive design is not implemented in this product.

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