

# NDL7515P Series

## InGaAsP MQW DC-PBH PULSED LASER DIODE MODULE 1 310 nm OTDR APPLICATION

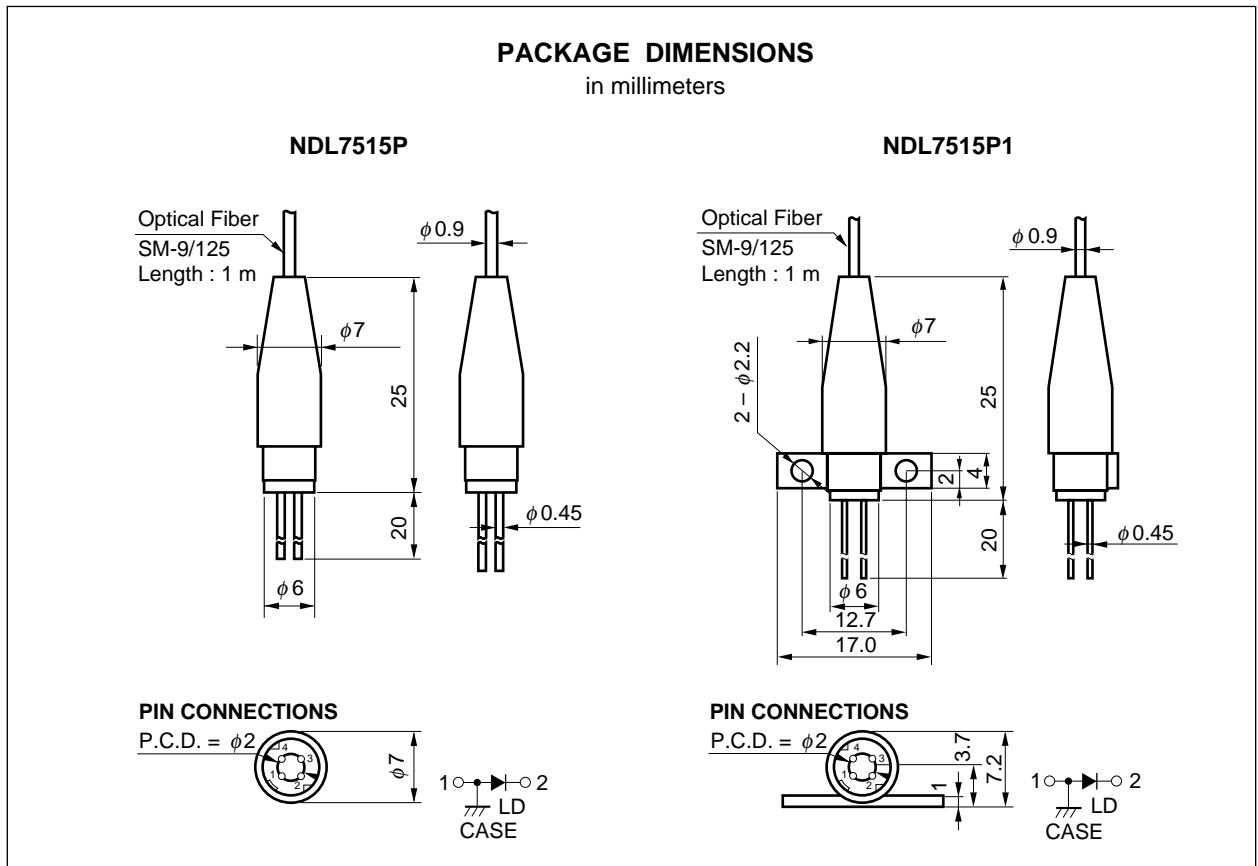
### DESCRIPTION

The NDL7515P Series is a 1 310 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  $P_f = 20 \text{ mW MIN. @ } I_{FP} = 400 \text{ mA, } T_c = 25 \text{ }^\circ\text{C}^{-1}$
- Long wavelength  $\lambda_c = 1 \text{ 310 nm}$
- Coaxial module without thermoelectric cooler
- Single mode fiber pigtail

\*1 Pulse conditions: Pulse width (PW) = 10  $\mu\text{s}$ , Duty = 1 %



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

**ORDERING INFORMATION**

Part Number	Available Connector	Flange Type
NDL7515P	Without Connector	No Flange
NDL7515PC	With FC-PC Connector	
NDL7515P1	Without Connector	Flat Mount Flange
NDL7515P1C	With FC-PC Connector	

**ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub> = 25 °C, unless otherwise specified)**

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current*1	I <sub>FP</sub>	600	mA
Reverse Voltage of LD	V <sub>R</sub>	2.0	V
Operating Case Temperature	T <sub>C</sub>	-20 to +60	°C
Storage Temperature	T <sub>stg</sub>	-40 to +85	°C
Lead Soldering Temperature (10 s)	T <sub>slid</sub>	260	°C

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

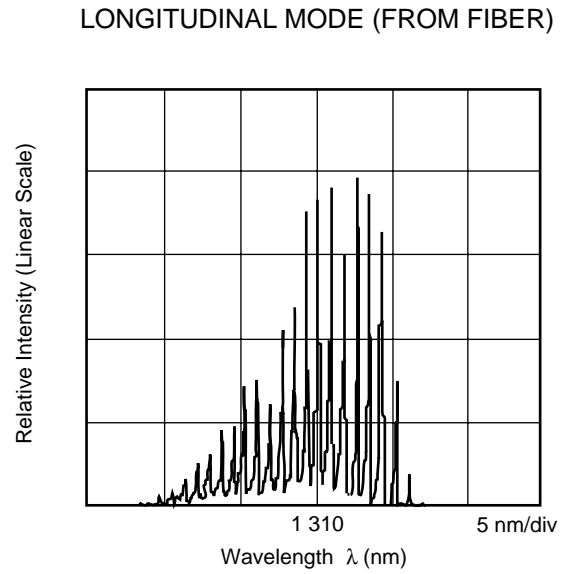
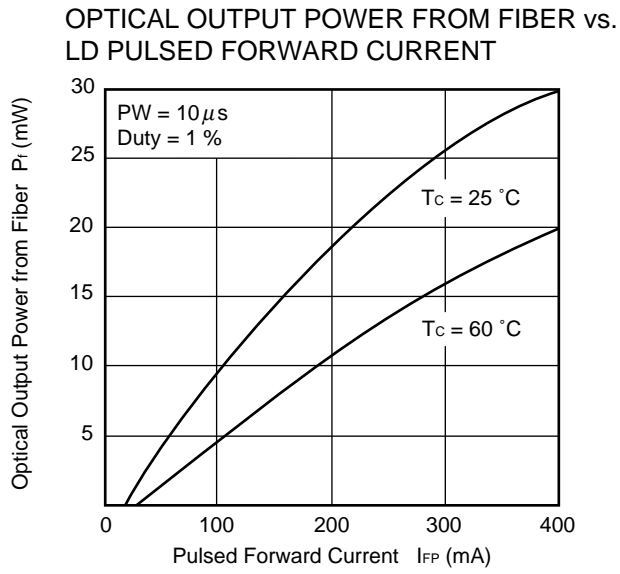
**ELECTRO-OPTICAL CHARACTERISTICS (T<sub>c</sub> = 25 °C)**

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V <sub>FP</sub>	I <sub>FP</sub> = 400 mA, PW = 10 μs, Duty = 1 %		2.5	4.0	V
Threshold Current	I <sub>th</sub>			20	30	mA
Optical Output Power from Fiber	P <sub>f</sub>	I <sub>FP</sub> = 400 mA, PW = 10 μs, Duty = 1 %	20	30		mW
Center Wavelength	λ <sub>C</sub>	I <sub>FP</sub> = 400 mA, PW = 10 μs, Duty = 1 %, RMS (-20 dB)	1 290	1 310	1 330	nm
Spectral Width	σ	I <sub>FP</sub> = 400 mA, PW = 10 μs, Duty = 1 %, RMS (-20 dB)			10	nm
Rise Time	t <sub>r</sub>	10 to 90 %			1.0	ns
Fall Time	t <sub>f</sub>	90 to 10 %			1.0	ns

**ELECTRO-OPTICAL CHARACTERISTICS (T<sub>c</sub> = 0 to +60°C)**

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold Current	I <sub>th</sub>				50	mA
Optical Output Power from Fiber	P <sub>f</sub>	I <sub>FP</sub> = 400 mA, PW = 10 μs, Duty = 1 %	10			mW
Center Wavelength	λ <sub>C</sub>	I <sub>FP</sub> = 400 mA, PW = 10 μs, Duty = 1 %, RMS (-20 dB)	1 280		1 342.5	nm
Temperature Dependence of Center Wavelength	Δλ/ΔT			0.35		nm/°C
Spectral Width	σ	I <sub>FP</sub> = 400 mA, PW = 10 μs, Duty = 1 %, RMS (-20 dB)			10	nm

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



★ LASER DIODE FAMILY FOR OTDR APPLICATION

Features Packages	1.31 $\mu\text{m}$		1.55 $\mu\text{m}$		$I_{FP}^{*1}$ (mA)	Remarks
	Part Number	P (mW) MIN./TYP.	Part Number	P (mW) MIN./TYP.		
$\phi$ 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  $\mu\text{s}$ , Duty = 1 % (modules)  
Pulse width = 1  $\mu\text{s}$ , Duty = 1 % ( $\phi$  5.6 can)

**REFERENCE**

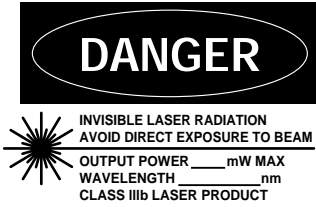
Document Name	Document No.
NEC semiconductor device reliability/quality control system	LEI-1201
Quality grades on NEC semiconductor devices	C11531E
Semiconductor device mounting technology manual	C10535E
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	X10679E

[MEMO]

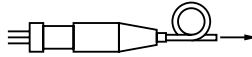
[MEMO]

**CAUTION**

**Within this 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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**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.