

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

Send any inquiries to <http://www.renesas.com/inquiry>.

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NDL7515P Series

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

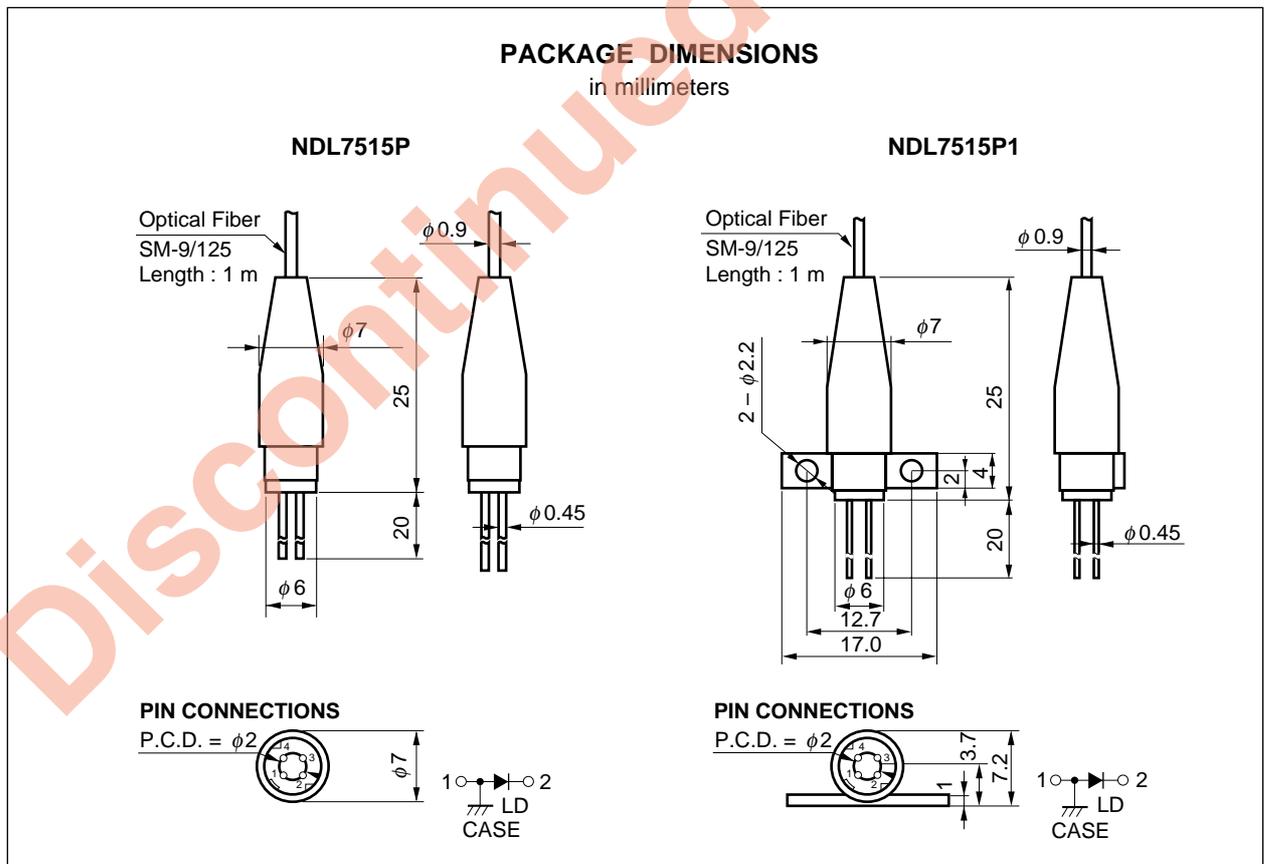
DESCRIPTION

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 $\lambda_c = 1\,310 \text{ nm}$
- Coaxial module without thermoelectric cooler
- Single mode fiber pigtail

*1 Pulse conditions: Pulse width (PW) = 10 μs , 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_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 _{slid}	260	°C

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

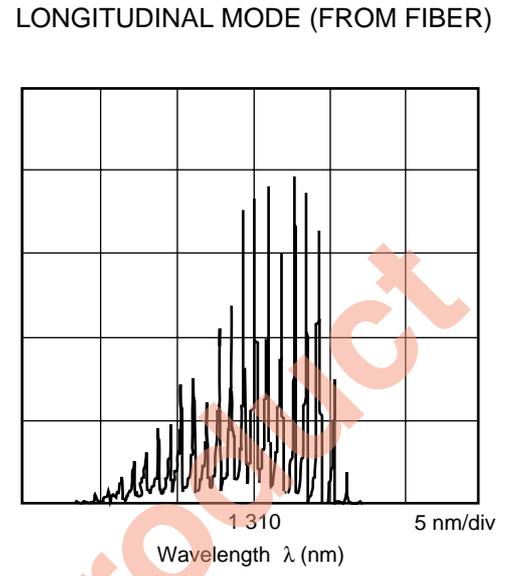
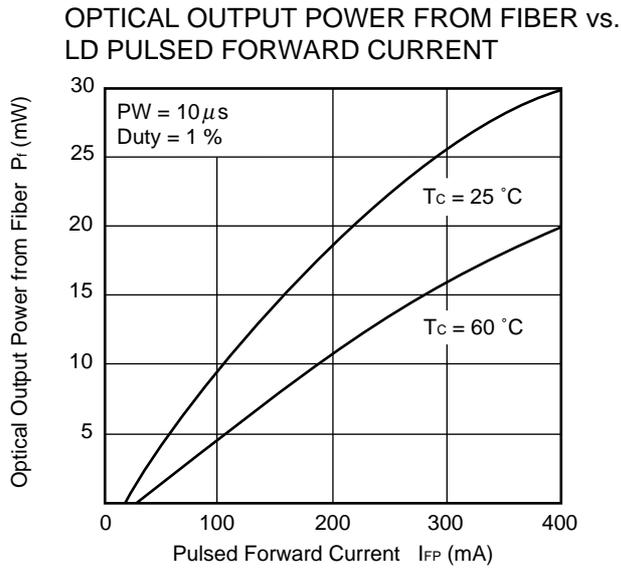
ELECTRO-OPTICAL CHARACTERISTICS (T_c = 25 °C)

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 %	20	30		mW
Center Wavelength	λ _c	I _{FP} = 400 mA, PW = 10 μs, Duty = 1 %, RMS (-20 dB)	1 290	1 310	1 330	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 %	10			mW
Center Wavelength	λ _c	I _{FP} = 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 _{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)



Discontinued Product

★ 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)

Discontinued Product

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

Discontinued Product

[MEMO]

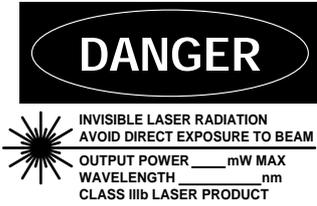
Discontinued Product

[MEMO]

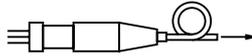
Discontinued Product

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.