

ABSOLUTE MAXIMUM RATINGS (T_c = 25 °C)

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current *1	I _{FP}	1.2	A
Reverse Voltage	V _R	2.0	V
Operating Case Temperature	T _C	-40 to +70	°C
Storage Temperature	T _{stg}	-55 to +125	°C
Lead Soldering Temperature (10 sec)	T _{slid}	260	°C

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

ELECTRO-OPTICAL CHARACTERISTICS (T_c = 25 °C)

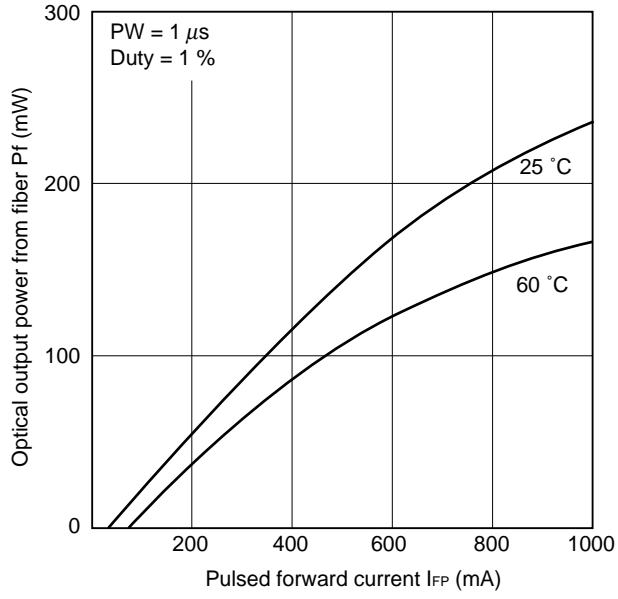
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V _{FP}	I _{FP} = 1000 mA, PW = 1 μs, Duty = 1 %		2.5	4.0	V
Threshold Current	I _{th}			45	75	mA
Optical Output Power	P _O	I _{FP} = 1000 mA, PW = 1 μs, Duty = 1 %	220	240		mW
RMS Center Wavelength	λ _C	I _{FP} = 1000 mA, PW = 1 μs, Duty = 1 %	1530	1550	1570	nm
RMS Spectral Width	σ	I _{FP} = 1000 mA, PW = 1 μs, Duty = 1 %		5.5	8.0	nm
Rise Time	t _r	10 - 90 %			2.0	ns
Fall Time	t _f	90 - 10 %			2.0	ns
Lateral Beam Angle	θ _l	P _O = 10 mW, FAHM, CW		20	35	deg.
Vertical Beam Angle	θ _v	P _O = 10 mW, FAHM, CW		25	40	deg.

FAHM: Full Angle at Half Maximum

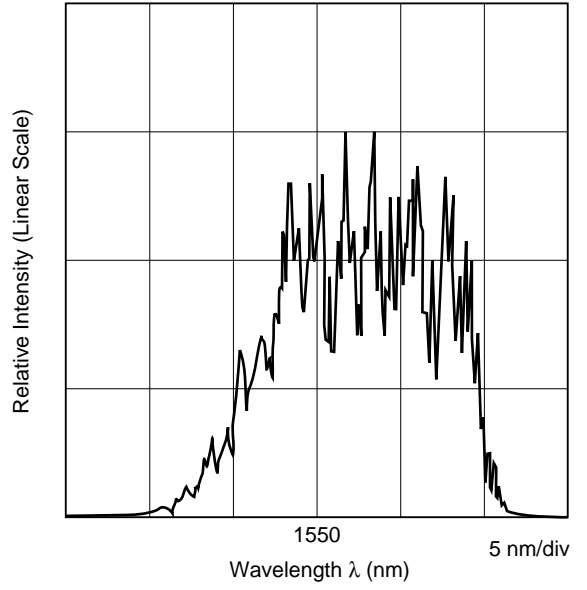
ELECTRO-OPTICAL CHARACTERISTICS (T_c = 0 to +60 °C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold Current	I _{th}				100	mA
Optical Output Power	P _O	I _{FP} = 1000 mA, PW = 1 μs, Duty = 1 %	135			mW
RMS Center Wavelength	λ _C	I _{FP} = 1000 mA, PW = 1 μs, Duty = 1 %	1505		1590	nm
Temperature Dependency of Center Wavelength	Δλ / ΔT			0.35		nm/°C
RMS Spectral Width	σ	I _{FP} = 1000 mA, PW = 1 μs, Duty = 1 %			10	nm

OPTICAL OUTPUT POWER FROM FIBER vs.
LD PULSE FORWARD CURRENT



LONGITUDINAL MODE (FROM FIBER)



LASER DIODE FAMILY FOR OTDR APPLICATION

Features Package	1.31 μm		1.55 μm		IFP *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	1000	
	NDL7113	160/175	NDL7163	100/120	400	
4 pin COAXIAL MODULE with SMF	NDL7503P/P1	110/180	NDL7553P/P1	96/145	1000	P: no flange P1: with flange
	NDL7513P/P1	70/110	NDL7563P/P1	60/80	400	
	NDL7514P/P1	25/50	NDL7564P/P1	15/40	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	

These modules are also available with FC-PC.

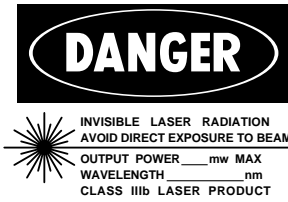
*1 Pulse conditions; pulse width = 10 μs , duty = 1 % (modules)
pulse width = 1 μs , duty = 1 % (ϕ 5.6 can)

REFERENCE

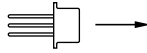
DOCUMENT NAME	DOCUMENT NO.
NEC semiconductor device reliability/quality control system	IEI-1205
Quality grade on NEC semiconductor devices	IEI-1209
Semiconductor device mounting technology manual	IEI-1207
Semiconductor device package manual	MEI-1213
Guide to quality assurance for semiconductor devices	IEI-1202
Semiconductor selection guide	X10679E

CAUTION

Within this device there exists GaAs (Gallium Arsenide) material which is a harmful substance if ingested. Please do not under any circumstance 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 DHHS
regulations as applicable
to standards 21 CFR Chapter I,
Subchapter J.**

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NEC devices are classified into the following three quality grades:

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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.

The quality grade of NEC devices in "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 NEC Sales Representative in advance.

Anti-radioactive design is not implemented in this product.