

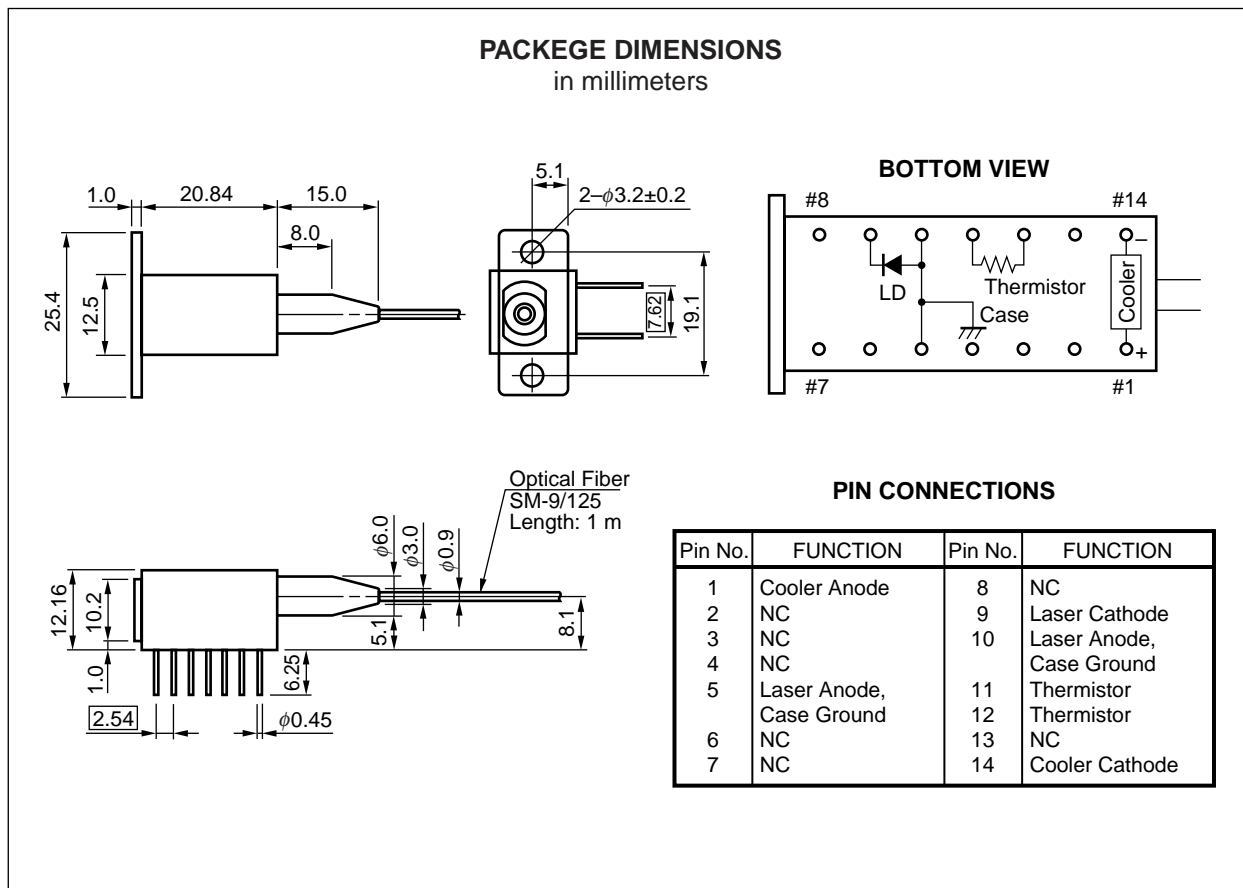
InGaAsP STRAINED DC PBH PULSED LASER DIODE MODULE
1 625 nm OTDR APPLICATION

DESCRIPTION

The NDL7580P is a 1 625 nm newly developed Strained Multiple Quantum Well (St-MQW) structure pulsed laser diode DIP module with single mode fiber and internal thermoelectric cooler. It is designed for light sources of optical measurement equipment (OTDR).

FEATURES

- Output power $P_f = 100 \text{ mW} @ I_{FP} = 1\,000 \text{ mA}$
- Long wavelength $PW = 10 \mu\text{s}, \text{Duty} = 1 \%$
- Wide operating temperature range $\lambda_c = 1\,625 \text{ nm}$
- Internal thermoelectric cooler $T_c = -20 \text{ to } +65 \text{ }^\circ\text{C}$
- Hermetically sealed 14-pin DIP Package
- Single mode fiber pigtail



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★ ORDERING INFORMATION

Part Number	Description
NDL7580P	Without Connector
NDL7580PC	With FC-PC Connector

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

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	-20 to +65	°C
Storage Temperature	T _{stg}	-40 to +70	°C
Lead Soldering Temperature (10 s)	T _{slid}	260	°C

*1 Pulse Condition: Pulse Width (PW) = 10 μs, Duty = 1 %

ELECTRO-OPTICAL CHARACTERISTICS (T_{LD} = 25 °C, T_c = -20 °C to +65 °C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V _{FP}	I _{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %			4.0	V
Threshold Current	I _{th}			30	70	mA
Optical Output Power from Fiber	P _f	I _{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %	100			mW
RMS Center Wavelength	λ _c	I _{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %	1 615	1 625	1 635	nm
RMS Spectral Width	σ	I _{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %		7.0	15.0	nm
Rise Time	t _r	10 - 90 %			2.0	ns
Fall Time	t _f	90 - 10 %			2.0	ns

ELECTRO-OPTICAL CHARACTERISTICS

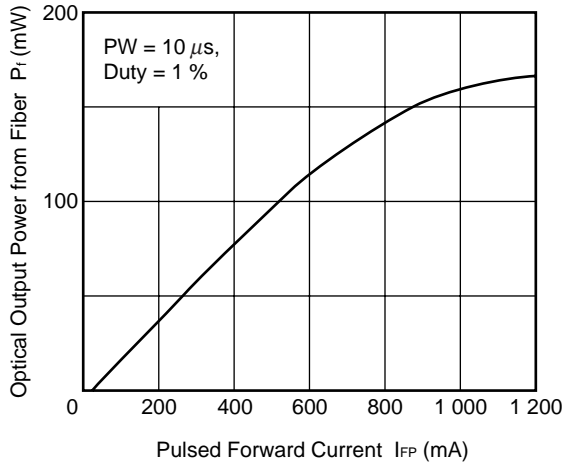
(Applicable to Thermistor and TEC: T_{LD} = 25 °C, T_c = -20 °C to +65 °C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Thermistor Resistance	R	T _{LD} = 25 °C	9.5	10.0	10.5	kΩ
B Constant	B		3 300	3 400	3 500	K
Cooler Current	I _c	ΔT = 40 K		0.6	1.0	A
Cooler Voltage	V _c	ΔT = 40 K		1.1	1.5	V
Cooling Capacity	ΔT ^{*1}	I _c = 1.0 A	40			K

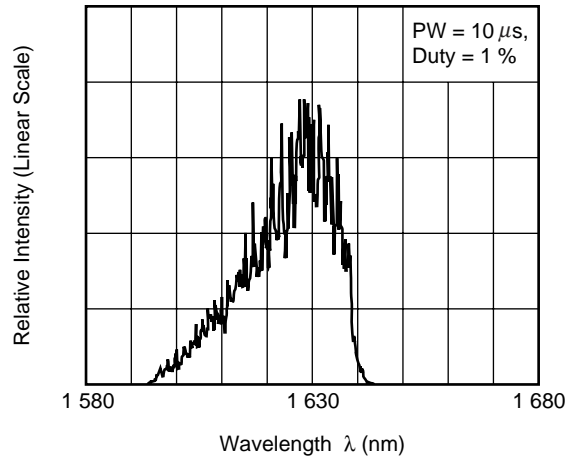
*1 ΔT = |T_c - T_{LD}|

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

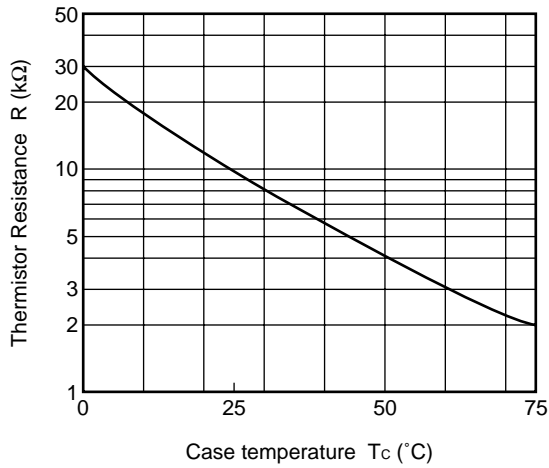
OPTICAL OUTPUT POWER FROM FIBER vs. PULSED FORWARD CURRENT



LONGITUDINAL MODE (FROM FIBER)



THERMISTOR RESISTANCE vs. CASE TEMPERATURE



Remark The graphs indicate nominal characteristics.

★ REFERENCE

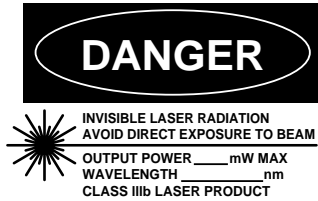
Document Name	Document No.
NEC semiconductor device reliability/quality control system	C11159E
Quality grades on NEC semiconductor devices	C11531E
Semiconductor device mounting technology manual	C10535E
SEMICONDUCTORS SELECTION GUIDE Products & Packages (CD-ROM)	X13769X

[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.

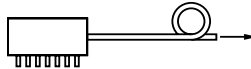


DANGER

INVISIBLE LASER RADIATION
AVOID DIRECT EXPOSURE TO BEAM

OUTPUT POWER _____mW MAX
WAVELENGTH _____nm
CLASS IIIb LASER PRODUCT

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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