

PRELIMINARY DATA SHEET

NEC

LASER DIODE NX7661JB

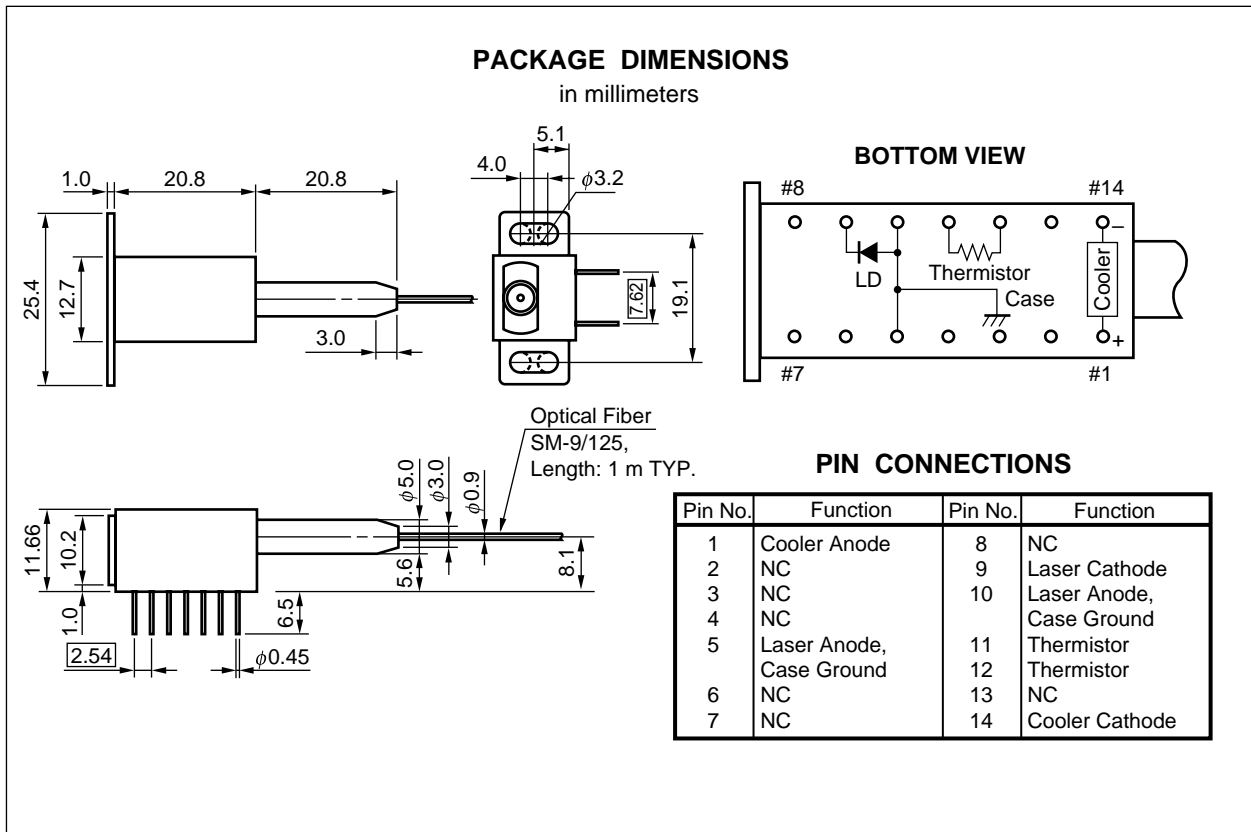
InGaAsP STRAINED MQW DC-PBH PULSED LASER DIODE MODULE 1 625 nm OTDR APPLICATION

DESCRIPTION

The NX7661JB 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

- High output power $P_i = 120 \text{ mW MIN. @ } I_{FP} = 1\,000 \text{ mA, PW} = 10 \mu\text{s, Duty} = 1\%$
- Long wavelength $\lambda_c = 1\,625 \text{ nm}$
- Internal thermoelectric cooler, thermistor
- Hermetically sealed 14-pin Dual-In-Line Package
- Single mode fiber pigtail



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Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.

ORDERING INFORMATION

Part Number	Available Connector
NX7661JB	Without Connector
NX7661JB-BA	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
Cooler Current	I _C	1.0	A
Cooler Voltage	V _C	2.0	V
Thermistor Current	I _t	0.5	mA
Thermistor Voltage	V _t	12.0	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 conditions: Pulse width (PW) = 10 μs, Duty = 1 %

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V _{FP}	CW, I _F = 30 mA			4.0	V
Threshold Current	I _{th}	CW		30	70	mA
Optical Output Power from Fiber	P _f	I _{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %	120			mW
Center Wavelength	λ _C	RMS, I _{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %	1 615	1 625	1 635	nm
Spectral Width	σ	RMS, I _{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %		7.0	15	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 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	0.8	A
Cooler Voltage	V _C	ΔT = 40 K		1.1	1.5	V
Cooling Capacity	ΔT ^{*1}	I _C = 0.8 A	40			K

*1 $\Delta T = |T_C - T_{LD}|$

LASER DIODE FAMILY FOR OTDR APPLICATION

Part number	Absolute maximum ratings			Electro-optical characteristics (T _c = 25 °C)						Package
	I _F ^{*1} (mA)	T _c (°C)	T _{stg} (°C)	I _{th} (mA)	I _{FP} ^{*1} (mA)	P _o /P _t ^{*1} (mW)	λ _c ^{*1} (nm)	σ ^{*2} (nm)	t _r /t _f (ns)	
				TYP.	TYP.	TYP.	TYP.	MAX.	MAX.	
NDL7103	1200	-40 to +70	-55 to +125	35	1 000	320	1 310	7	2/2	CAN
NDL7113	600	-40 to +70	-55 to +125	20	400	175	1 310	10	1/1	CAN
NDL7153	1200	-40 to +70	-55 to +125	45	1 000	240	1 550	8	2/2	CAN
NDL7163	600	-40 to +70	-55 to +125	30	400	120	1 550	10	1/1	CAN
NDL7503P series	1200	-20 to +60	-40 to +85	35	1 000	180	1 310	10	2/2	Coaxial
NDL7513P series	600	-20 to +60	-40 to +85	20	400	110	1 310	10	1/1	Coaxial
NDL7514P series	600	-20 to +60	-40 to +85	20	400	50	1 310	10	1/1	Coaxial
NDL7515P series	600	-20 to +60	-40 to +85	20	400	30	1 310	10	1/1	Coaxial
NDL7553P series	1200	-20 to +60	-40 to +85	45	1 000	145	1 550	10	2/2	Coaxial
NDL7563P series	600	-20 to +60	-40 to +85	40	400	80	1 550	10	1/1	Coaxial
NDL7564P series	600	-20 to +60	-40 to +85	40	400	40	1 550	10	1/1	Coaxial
NDL7565P series	600	-20 to +60	-40 to +85	20	400	11	1 550	10	1/1	Coaxial
NX7361JB	1200	-20 to +65	-40 to +70	35	1 000	150 ^{*3}	1 310	7	2/2	DIP
NX7561JB	1200	-20 to +65	-40 to +70	40	1 000	135 ^{*3}	1 550	8	2/2	DIP
NX7661JB	1200	-20 to +65	-40 to +70	30	1 000	120 ^{*3}	1 625	7	2/2	DIP

*1 Pulse conditions: Pulse width = 10 μs, Duty = 1 % (Coaxial, DIP)
Pulse width = 1 μs, Duty = 1 % (CAN)

*2 RMS (-20 dB)

*3 MIN.

[MEMO]

[MEMO]

CAUTION

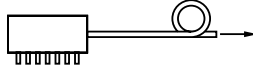
Within this device there exists GaAs (Gallium Arsenide) material which is a harmful substance if ingested. Please do not under any circumstances break the hermetic seal.

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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