



LASER DIODE
NX7663JB-BC

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

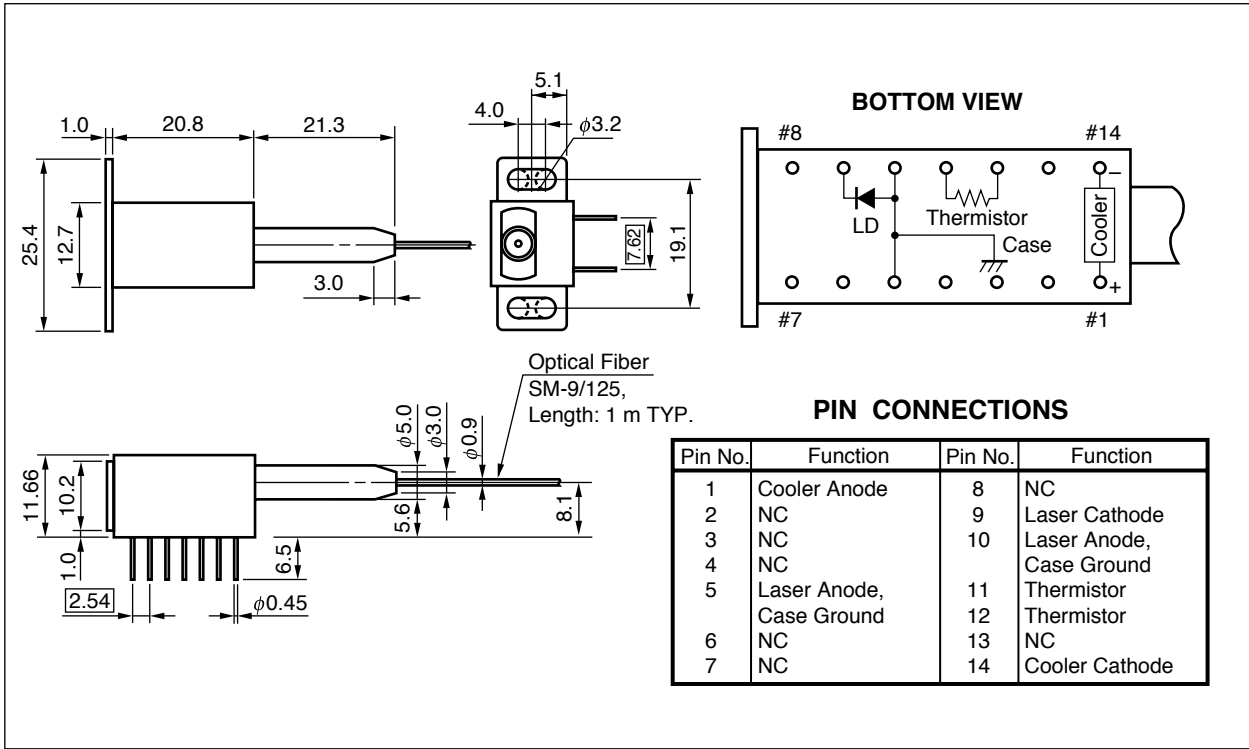
DESCRIPTION

The NX7663JB-BC is a 1 625 nm Multiple Quantum Well (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 $P_r = 120 \text{ mW MIN. @ } I_{FP} = 1\,000 \text{ mA, PW} = 10 \mu\text{s, Duty} = 1\%$
- Long wavelength $\lambda_c = 1\,625 \text{ nm}$
- Internal thermoelectric cooler, thermistor
- Hermetically sealed 14-pin Dual-In-Line Package
- Single mode fiber pigtail

PACKAGE DIMENSIONS (UNIT: mm)



The information in this document is subject to change without notice. Before using this document, please confirm that this is the latest version.

ORDERING INFORMATION

Part Number	Available Connector
NX7663JB-BC-AZ*	With FC-UPC Connector

***Note** Please refer to the last page of this data sheet “Compliance with EU Directives” for Pb-Free RoHS Compliance Information.

ABSOLUTE MAXIMUM RATINGS

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	T _{sld}	260 (10 sec)	°C

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

ELECTRO-OPTICAL CHARACTERISTICS ($T_{LD} = 25^{\circ}\text{C}$, $T_C = -20$ to $+65^{\circ}\text{C}$)

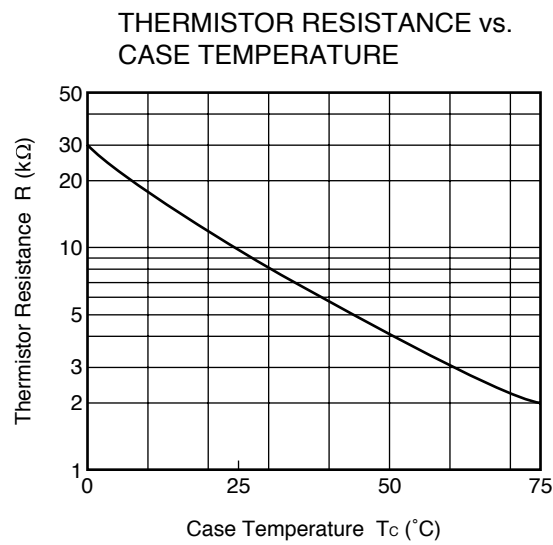
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V_{FP}	CW, $I_F = 30\text{ mA}$			4.0	V
Threshold Current	I_{th}	CW		30	70	mA
Optical Output Power from Fiber	P_r	$I_{FP} = 1\,000\text{ mA}$, $PW = 10\text{ }\mu\text{s}$, Duty = 1%	120			mW
Center Wavelength	λ_C	RMS, $I_{FP} = 1\,000\text{ mA}$, $PW = 10\text{ }\mu\text{s}$, Duty = 1%	1 615	1 625	1 635	nm
Spectral Width	σ	RMS, $I_{FP} = 1\,000\text{ mA}$, $PW = 10\text{ }\mu\text{s}$, 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: $T_{LD} = 25^{\circ}\text{C}$, $T_C = -20$ to $+65^{\circ}\text{C}$)**

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Thermistor Resistance	R	$T_{LD} = 25^{\circ}\text{C}$	9.5	10.0	10.5	$\text{k}\Omega$
B Constant	B		3 350	3 450	3 550	K
Cooler Current	I_C	$\Delta T = 40^{\circ}\text{C}$		0.6	0.8	A
Cooler Voltage	V_C	$\Delta T = 40^{\circ}\text{C}$		1.1	1.5	V
Cooling Capacity	ΔT^{*1}	$I_C = 0.8\text{ A}$	40			$^{\circ}\text{C}$

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

TYPICAL CHARACTERISTICS



Remark The graphs indicate nominal characteristics.

REFERENCE

Document Name	Document No.
Optical semiconductor devices for fiberoptic communications Selection Guide	P12480E
Opto-Electronics Devices Pamphlet	P13623E
Opto-Electronics Devices (CD-ROM)	P12944X
NEC semiconductor device reliability/quality control system ^{*1}	C11159E
Quality grades on NEC semiconductor devices ^{*1}	C11531E
SEMICONDUCTOR SELECTION GUIDE –Products and Packages– ^{*1}	X13769E

^{*1} Published by NEC Corporation

Subject: Compliance with EU Directives

CEL certifies, to its knowledge, that semiconductor and laser products detailed below are compliant with the requirements of European Union (EU) Directive 2002/95/EC Restriction on Use of Hazardous Substances in electrical and electronic equipment (RoHS) and the requirements of EU Directive 2003/11/EC Restriction on Penta and Octa BDE.

CEL Pb-free products have the same base part number with a suffix added. The suffix –A indicates that the device is Pb-free. The –AZ suffix is used to designate devices containing Pb which are exempted from the requirement of RoHS directive (*). In all cases the devices have Pb-free terminals. All devices with these suffixes meet the requirements of the RoHS directive.

This status is based on CEL's understanding of the EU Directives and knowledge of the materials that go into its products as of the date of disclosure of this information.

Restricted Substance per RoHS	Concentration Limit per RoHS (values are not yet fixed)	Concentration contained in CEL devices	
		-A Not Detected	-AZ (*)
Lead (Pb)	< 1000 PPM		
Mercury	< 1000 PPM	Not Detected	
Cadmium	< 100 PPM	Not Detected	
Hexavalent Chromium	< 1000 PPM	Not Detected	
PBB	< 1000 PPM	Not Detected	
PBDE	< 1000 PPM	Not Detected	

If you should have any additional questions regarding our devices and compliance to environmental standards, please do not hesitate to contact your local representative.

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In no event shall CEL's liability arising out of such information exceed the total purchase price of the CEL part(s) at issue sold by CEL to customer on an annual basis.

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