

# NX7663JB-BC

LASER DIODE

R08DS0011EJ0200

Rev.2.00

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

Sep 19, 2010

## 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).

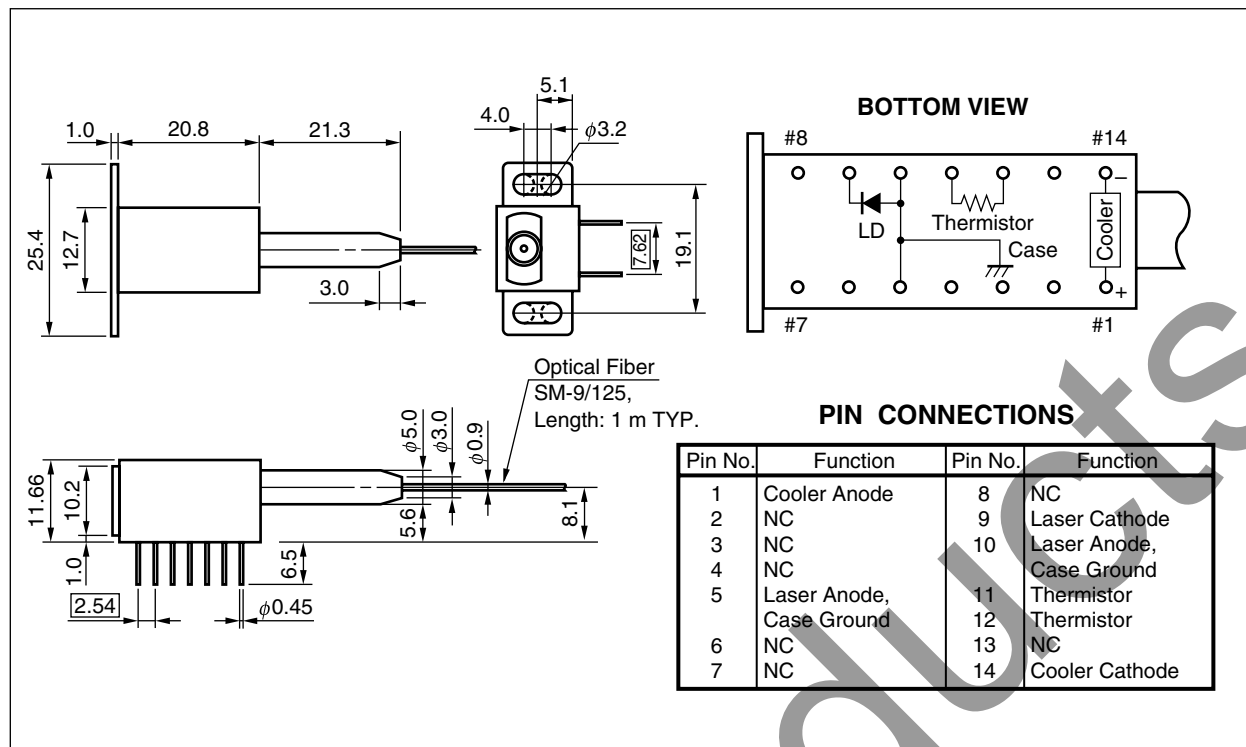
## FEATURES

- 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

The mark <R> shows major revised points.

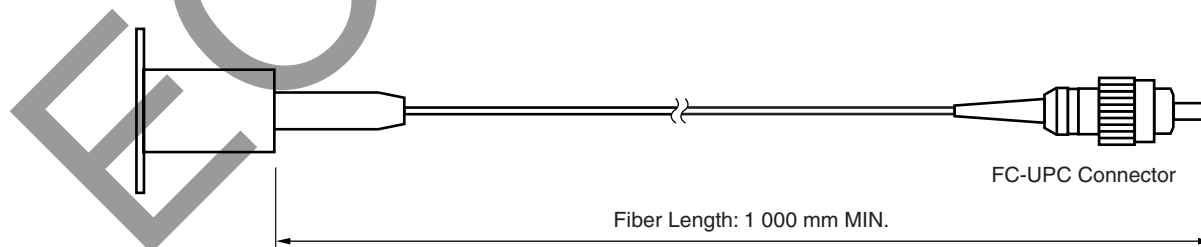
The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

## PACKAGE DIMENSIONS (UNIT: mm)



## OPTICAL FIBER CHARACTERISTICS

Parameter	Specification	Unit
Mode Field Diameter	9.5±1	μm
Cladding Diameter	125±2	μm
Maximum Cladding Noncircularity	2	%
Maximum Core/Cladding Concentricity	1.6	%
Outer Diameter	0.9±0.1	mm
Cut-off Wavelength	1 100 to 1 270	nm
Minimum Fiber Bending Radius	30	mm
Fiber Length	1 000 MIN.	mm
Flammability	UL1581 VW-1	



## ORDERING INFORMATION

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

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current <sup>*1</sup>	$I_{FP}$	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 +85	°C
Lead Soldering Temperature	$T_{slid}$	260 (10 sec.)	°C

\*1 Pulse conditions: Pulse width (PW) = 10  $\mu$ s, Duty = 1%

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

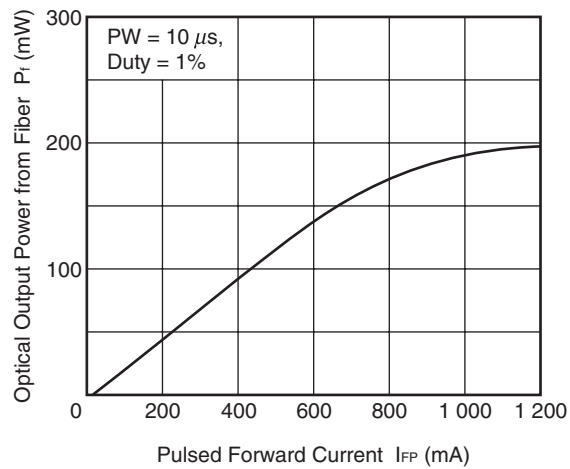
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	$V_{FP}$	CW, $I_F = 30$ mA			4.0	V
Threshold Current	$I_{th}$	CW		30	70	mA
Optical Output Power from Fiber	$P_i$	$I_{FP} = 1\,000$ mA, PW = 10 $\mu$ s, Duty = 1%	120			mW
Center Wavelength	$\lambda_C$	RMS, $I_{FP} = 1\,000$ mA, PW = 10 $\mu$ s, Duty = 1%	1 615	1 625	1 635	nm
Spectral Width	$\sigma$	RMS, $I_{FP} = 1\,000$ mA, PW = 10 $\mu$ 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

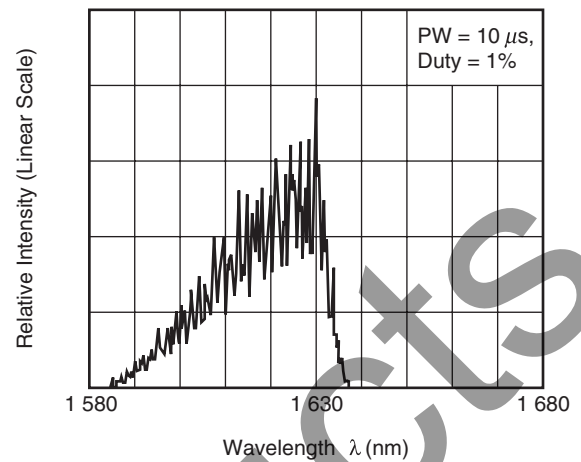
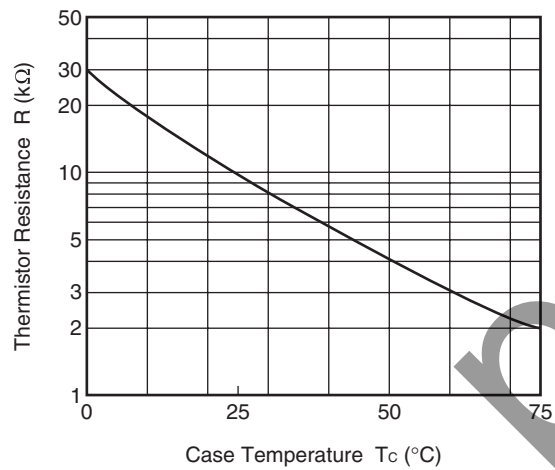
(Applicable to Thermistor and TEC:  $T_{LD} = 25^\circ\text{C}$ ,  $T_C = -20$  to  $+65^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Thermistor Resistance	R	$T_{LD} = 25^\circ\text{C}$	9.5	10.0	10.5	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	$\Delta T^{-1}$	$I_C = 0.8$ A	40			°C

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

TYPICAL CHARACTERISTICS ( $T_c = 25^\circ\text{C}$ , unless otherwise specified)OPTICAL OUTPUT POWER FROM FIBER vs.  
PULSED FORWARD CURRENT

SPECTRUM

THERMISTOR RESISTANCE vs.  
CASE TEMPERATURE

**Remark** The graphs indicate nominal characteristics.

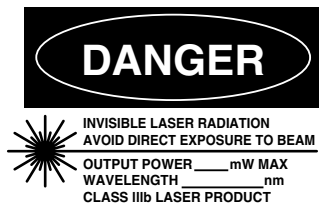
## REFERENCE

Document Name	Document No.
Opto-Electronics Devices Pamphlet <sup>*1</sup>	PX10160E

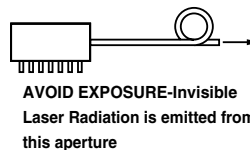
<sup>\*1</sup> Published by the former NEC Electronics Corporation.

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## SAFETY INFORMATION ON THIS PRODUCT



## SEMICONDUCTOR LASER



<b>Warning</b> Laser Beam	<p>A laser beam is emitted from this diode during operation. The laser beam, visible or invisible, directly or indirectly, may cause injury to the eye or loss of eyesight.</p> <ul style="list-style-type: none"> <li>Do not look directly into the laser beam.</li> <li>Avoid exposure to the laser beam, any reflected or collimated beam.</li> </ul>
<b>Caution</b> GaAs Products	<p>This product uses gallium arsenide (GaAs). GaAs vapor and powder are hazardous to human health if inhaled or ingested, so please observe the following points.</p> <ul style="list-style-type: none"> <li>Follow related laws and ordinances when disposing of the product. If there are no applicable laws and/or ordinances, dispose of the product as recommended below.               <ol style="list-style-type: none"> <li>Commission a disposal company able to (with a license to) collect, transport and dispose of materials that contain arsenic and other such industrial waste materials.</li> <li>Exclude the product from general industrial waste and household garbage, and ensure that the product is controlled (as industrial waste subject to special control) up until final disposal.</li> </ol> </li> <li>Do not burn, destroy, cut, crush, or chemically dissolve the product.</li> <li>Do not lick the product or in any way allow it to enter the mouth.</li> </ul>
<b>Caution</b> Optical Fiber	<p>A glass-fiber is attached on the product. Handle with care.</p> <ul style="list-style-type: none"> <li>When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.</li> </ul>

Revision History	NX7663JB-BC Data Sheet
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Rev.	Date	Description	
		Page	Summary
–	May 2007	–	Previous No. : PL10663EJ01V0DS
2.00	Sep 19, 2010	p.3	<b>ABSOLUTE MAXIMUM RATINGS</b> Storage Temperature : –40 to +70 -> –40 to +85

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2880 Scott Boulevard Santa Clara, CA 95050-2554, U.S.A.  
Tel: +1-408-588-6000, Fax: +1-408-588-6130

**Renesas Electronics Canada Limited**  
1101 Nicholson Road, Newmarket, Ontario L3Y 9C3, Canada  
Tel: +1-905-898-5441, Fax: +1-905-898-3220

**Renesas Electronics Europe Limited**  
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.  
Tel: +44-1628-585-100, Fax: +44-1628-585-900

**Renesas Electronics Europe GmbH**  
Arcadiastrasse 10, 40472 Düsseldorf, Germany  
Tel: +49-211-6503-0, Fax: +49-211-6503-1327

**Renesas Electronics (China) Co., Ltd.**  
7th Floor, Quantum Plaza, No.27 ZhichunLu Haidian District, Beijing 100083, P.R.China  
Tel: +86-10-8235-1165, Fax: +86-10-8235-7679

**Renesas Electronics (Shanghai) Co., Ltd.**  
Unit 204, 205, AZIA Center, No.1233 Lujiazui Ring Rd., Pudong District, Shanghai 200120, China  
Tel: +86-21-5877-1818, Fax: +86-21-6887-7858 / -7898

**Renesas Electronics Hong Kong Limited**  
Unit 1601-1613, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong  
Tel: +852-2886-9318, Fax: +852-2886-9022/9044

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7F, No. 263, Fu Shing North Road Taipei, Taiwan, R.O.C.  
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**Renesas Electronics Singapore Pte. Ltd.**  
1 HarbourFront Avenue, #06-10, Keppel Bay Tower, Singapore 098632  
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Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia  
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

**Renesas Electronics Korea Co., Ltd.**  
11F., Samik Laviel' or Bldg., 720-2 Yeoksam-Dong, Kangnam-Ku, Seoul 135-080, Korea  
Tel: +82-2-558-3737, Fax: +82-2-558-5141