

# NX8663JB-BC

R08DS0063EJ0100

LASER DIODE

Rev.1.00

1 650nm InGaAsP MQW-DFB DC-PBH PULSED LASER DIODE MODULE FOR OTDR APPLICATION

Jul 05, 2012

## DESCRIPTION

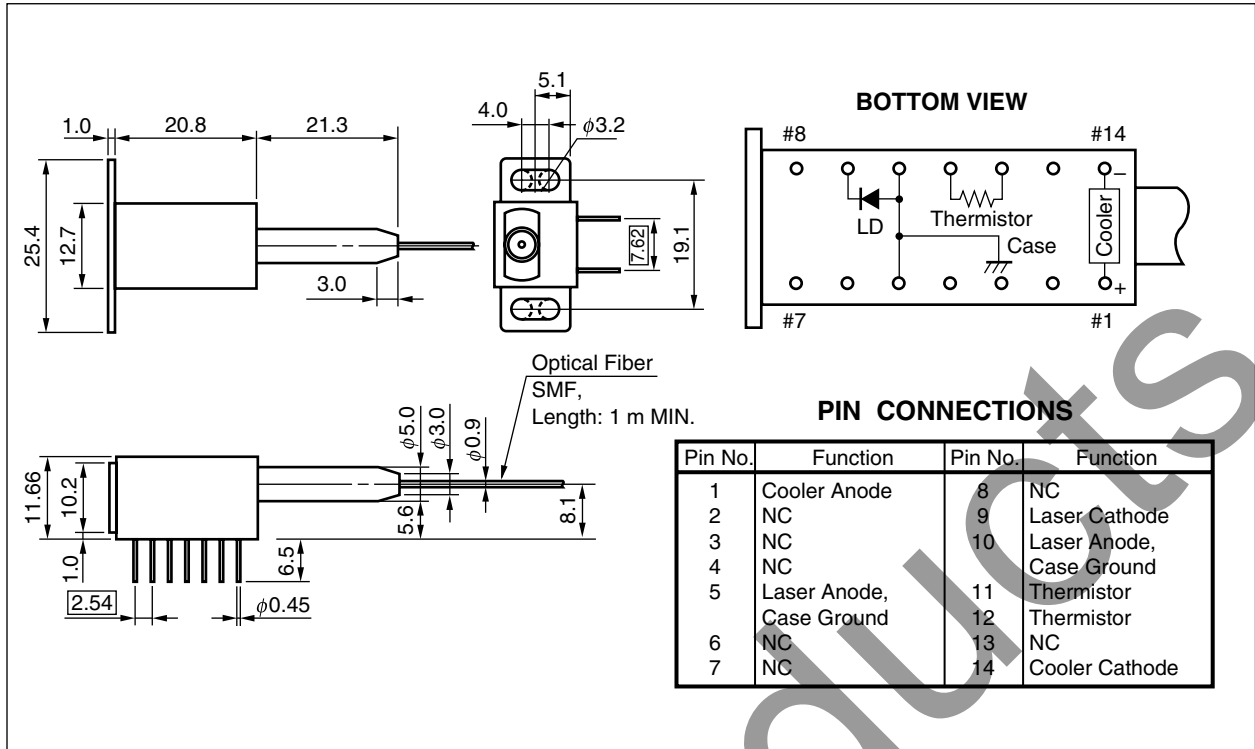
The NX8663JB-BC is a 1 650 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) pulsed laser diode DIP module with single mode fiber and internal thermoelectric cooler. It is designed for light sources of Optical Time Domain Reflectometer (OTDR).

## FEATURES

- Distributed Feed-Back (DFB) pulsed laser diode
- High output power  $P_f = 80 \text{ mW TYP. @ } I_{FP} = 450 \text{ mA, PW} = 10 \mu\text{s, Duty} = 1\%$
- Wavelength  $\lambda_p = 1 \text{ 650 nm TYP.}$
- Internal thermoelectric cooler, thermistor
- Hermetically sealed 14-pin Dual-In-Line Package
- Single mode fiber pigtail

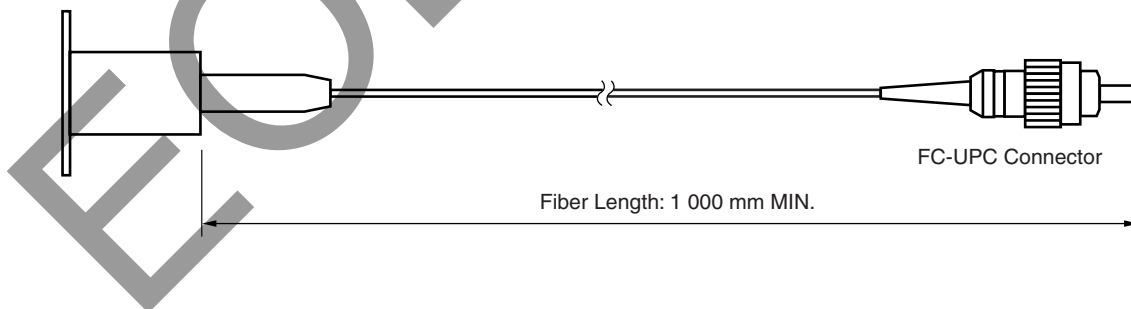
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**PACKAGE DIMENSIONS (UNIT: mm)**



**OPTICAL FIBER CHARACTERISTICS**

Parameter	Specification	Unit
Mode Field Diameter	9.3±0.5	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 1 280	nm
Minimum Fiber Bending Radius	30	mm
Fiber Length	1 000 MIN.	mm
Flammability	UL1581 VW-1	



## ORDERING INFORMATION

Part Number	Available Connector
NX8663JB-BC	With FC-UPC Connector

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Pulsed Forward Current <sup>*1</sup>	$I_{FP}$	0.6	A
Reverse Voltage	$V_R$	2.0	V
Cooler Current	$I_C$	1.0	A
Cooler Voltage	$V_C$	2.0	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

Note: \*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	$V_F$	CW, $I_F = 30$ mA			4.0	V
Threshold Current	$I_{th}$	CW		20	60	mA
Optical Output Power from Fiber	$P_f$	$I_{FP} = 450$ mA, PW = 10 $\mu$ s, Duty = 1%	50	80		mW
Peak Emission Wavelength	$\lambda_p$	$I_{FP} = 450$ mA, PW = 10 $\mu$ s, Duty = 1%	1 645	1 650	1 655	nm

**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	$I_C$	$\Delta T^{*1} = 40^\circ\text{C}$			0.8	A
Cooler Voltage	$V_C$	$\Delta T^{*1} = 40^\circ\text{C}$			1.5	V

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

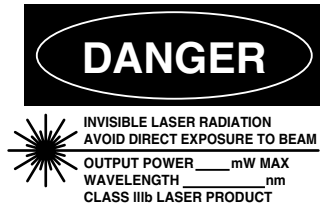
**REFERENCE**

Document Name	Document No.
Opto-Electronics Devices Pamphlet*1	PX10160E

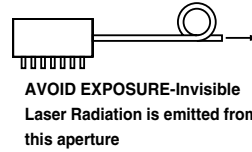
Note: \*1 Published by the former NEC Electronics Corporation.

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**SAFETY INFORMATION ON THIS PRODUCT**



**SEMICONDUCTOR LASER**



<p><b>Warning</b> Laser Beam</p>	<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>
<p><b>Caution</b> GaAs Products</p>	<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>1. 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>2. 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>
<p><b>Caution</b> Optical Fiber</p>	<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>

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<b>Revision History</b>	<b>NX8663JB-BC Data Sheet</b>
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Rev.	Date	Description	
		Page	Summary
1.00	Jul 05, 2012	-	First edition issued

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