CEL

LASER DIODE
NX7563JB-BC

InGaAsP MQW DC-PBH PULSED LASER DIODE MODULE
1 550 nm OTDR APPLICATION

DESCRIPTION

The NX7563JB-BC is a 1 550 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_f = 135 mW MIN. @ I_{FP} = 1 000 mA, PW = 10 μs, Duty = 1%
- Long wavelength λ_C = 1 550 nm
- Internal thermoelectric cooler, thermistor
- Hermetically sealed 14-pin Dual-In-Line Package
- Single mode fiber pigtail

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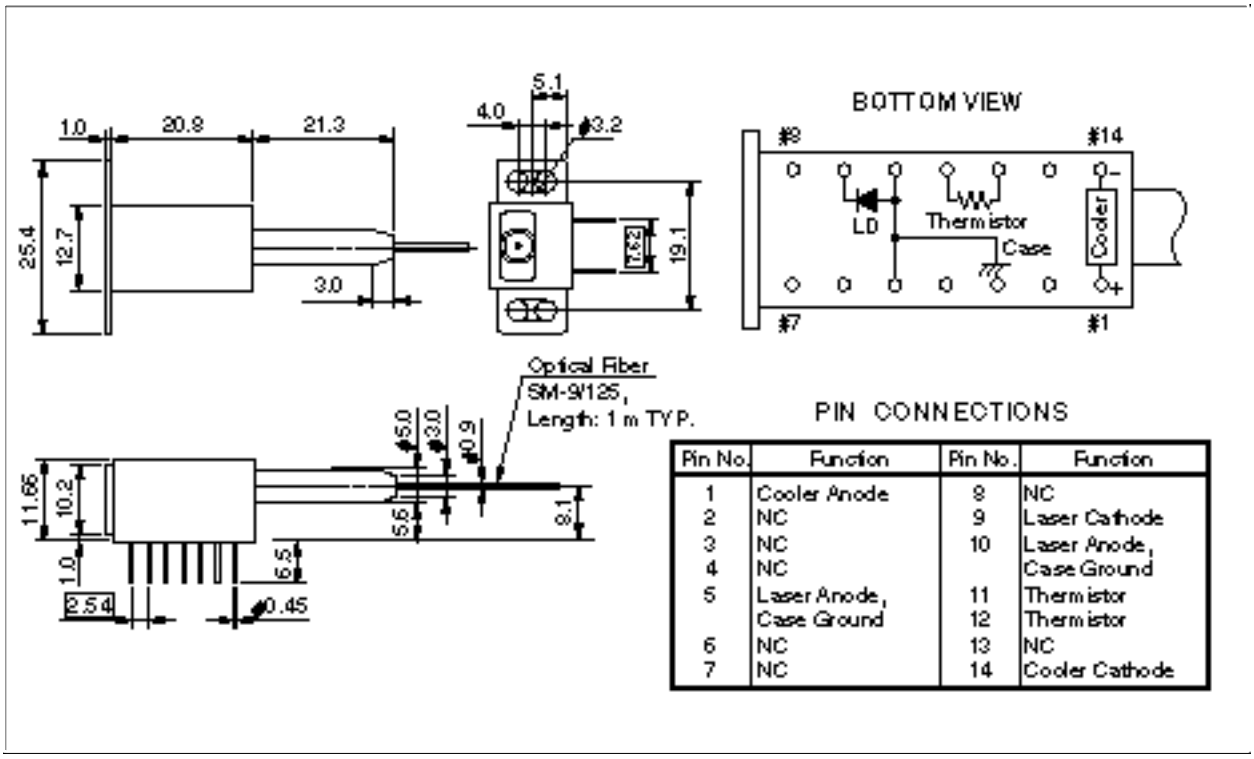
PACKAGE DIMENSIONS (UNIT: mm)

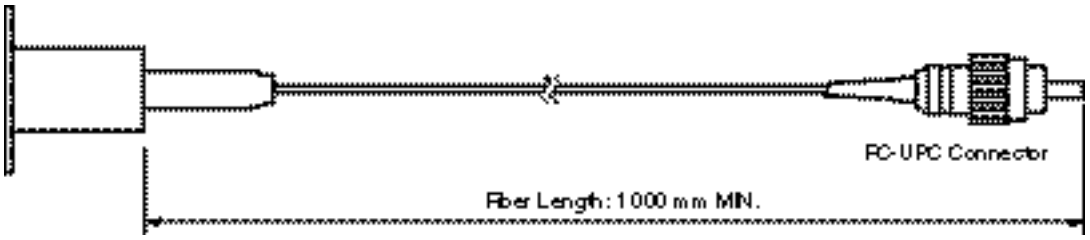


PIN CONNECTIONS

Pin No.	Function	Pin No.	Function
1	Cooler Anode	8	NC
2	NC	9	Laser Cathode
3	NC	10	Laser Anode, Case Ground
4	NC		
5	Laser Anode, Case Ground	11	Thermistor
		12	Thermistor
6	NC	13	NC
7	NC	14	Cooler Cathode

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
NX7563JB-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 μs, Duty = 1%

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V_{FP}	CW, I_F = 30 mA		2.5	4.0	V
Threshold Current	I_{th}	CW		40	70	mA
Optical Output Power from Fiber	P_f	I_{FP} = 1 000 mA, ***1**	135			mW
		I_{FP} = 600 mA, ***1**	70			
		I_{FP} = 400 mA, ***1**	20			
Center Wavelength	λ_C	RMS, I_{FP} = 400, 600, 1 000 mA, ***1**	1 530	1 550	1 570	nm
Spectral Width	σ	RMS, I_{FP} = 400, 600, 1 000 mA, ***1**		6.0	10.0	nm
Rise Time	t_r	10-90%		1.0	2.0	ns
Fall Time	t_f	90-10%		1.4	2.0	ns

***1** PW = 10 μs, Duty = 1%

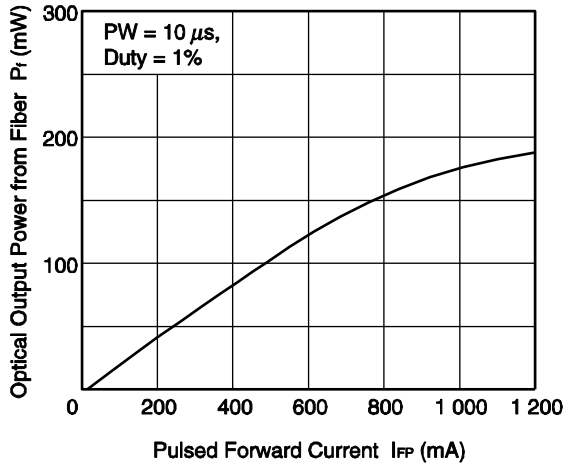
ELECTRO-OPTICAL CHARACTERISTICS
(Applicable to Thermistor and TEC: T_{LD} = 25°C, T_C = –20 to +65°C, unless otherwise specified)

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

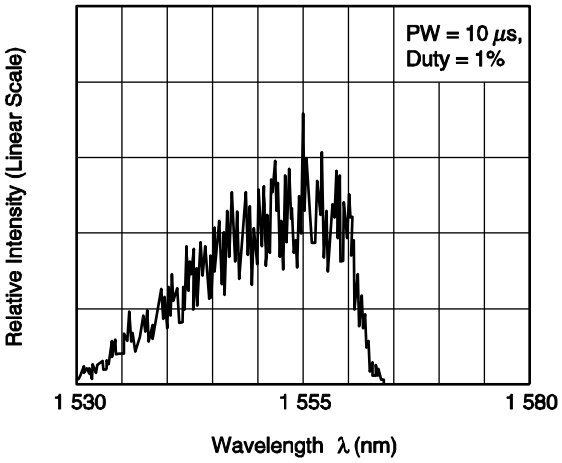
***1** $\Delta T = |T_C - T_{LD}|$

TYPICAL CHARACTERISTICS (T_C = 25°C, unless otherwise specified)

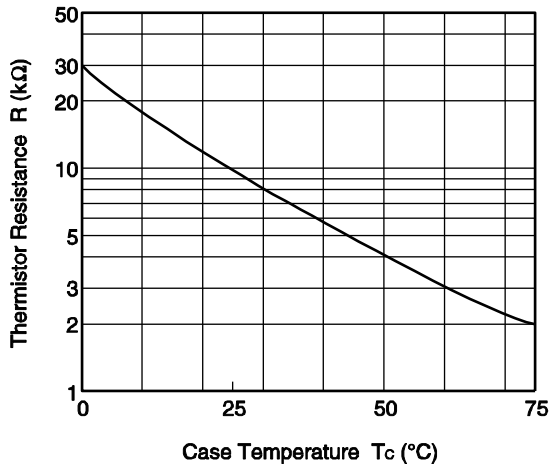
OPTICAL OUTPUT POWER FROM FIBER vs. PULSED FORWARD CURRENT



SPECTRUM



THERMISTOR RESISTANCE vs. CASE TEMPERATURE



Remark The graphs indicate nominal characteristics.

REFERENCE

Document Name	Document No.
Opto-Electronics Devices Pamphlet	PX10160E

SAFETY INFORMATION ON THIS PRODUCT

Warning Laser Beam	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. • Do not look directly into the laser beam. • Avoid exposure to the laser beam, any reflected or collimated beam.
Caution GaAs Products	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. • 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. 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. 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. • Do not burn, destroy, cut, crush, or chemically dissolve the product. • Do not lick the product or in any way allow it to enter the mouth.
Caution Optical Fiber	A glass-fiber is attached on the product. Handle with care. • When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.