To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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DATA SHEET

Phase-out/Discontinued

LASER DIODE

NX7327BF-AA

1 310 nm InGaAsP MQW-FP LASER DIODE
COAXIAL MODULE FOR OTDR APPLICATION

DESCRIPTION

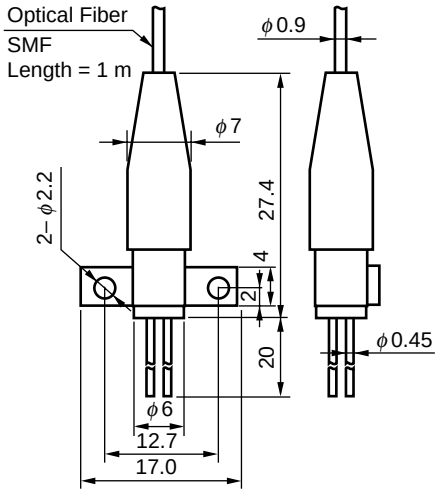
The NX7327BF-AA is a 1 310 nm Multiple Quantum Well (MQW) structured Fabry-Perot (FP) laser diode coaxial module with single mode fiber. This module is specified to operate under pulsed condition and designed for light source of Optical Time Domain Reflectometer (OTDR).

FEATURES

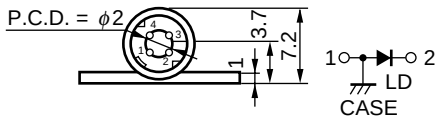
- High output power P_f = 180 mW @ I_{FP} = 1 000 mA[*1]
- Long wavelength λ_C = 1 310 nm

***1** Pulse Conditions: Pulse width (PW) = 10 μs, Duty = 1%

PACKAGE DIMENSIONS (UNIT: mm)



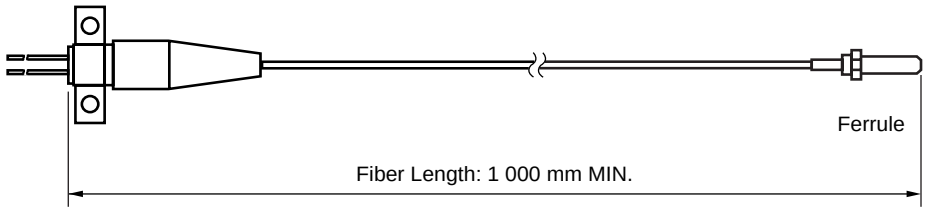
PIN CONNECTIONS



Document No. PL10002EJ01V0DS (1st edition)
Date Published November 2001 CP(K)
Printed in Japan

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	1 140 to 1 280	nm
Minimum Fiber Bending Radius	30	mm
Fiber Length	1 000 MIN.	mm



ORDERING INFORMATION

Part Number	FIange Type
NX7327BF-AA	flat mount flange

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
Operating Case Temperature	T_C	–20 to +60	°C
Storage Temperature	T_{stg}	–40 to +85	°C
Lead Soldering Temperature	T_{sld}	260 (10 sec)	°C
Relative Humidity (noncondensing)	RH	85	%

***1** Pulse Condition: Pulse Width (PW) = 10 μs, Duty = 1%

ELECTRO-OPTICAL CHARACTERISTICS (T_C = 25 °C)

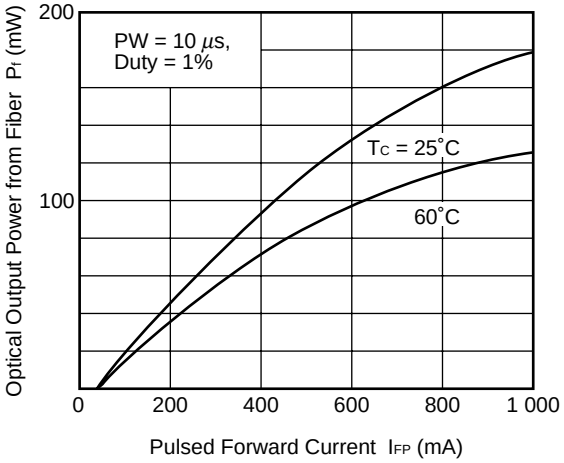
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward Voltage	V_{FP}	I_{FP} = 1 000 mA, PW = 10 μs, Duty = 1%		2.5	4.0	V
Threshold Current	I_{th}			35	65	mA
Optical Output Power from Fiber	P_f	I_{FP} = 1 000 mA, PW = 10 μs, Duty = 1%	110	180		mW
Center Wavelength	λ_C	RMS (–20 dB), I_{FP} = 1 000 mA, PW = 10 μs, Duty = 1%	1 290	1 310	1 330	nm
Spectral Width	σ	RMS (–20 dB), I_{FP} = 1 000 mA, PW = 10 μs, Duty = 1%		4.5	10.0	nm
Rise Time	t_r	10-90%			2.0	ns
Fall Time	t_f	90-10%			2.0	ns

ELECTRO-OPTICAL CHARACTERISTICS (T_C = 0 to +60°C)

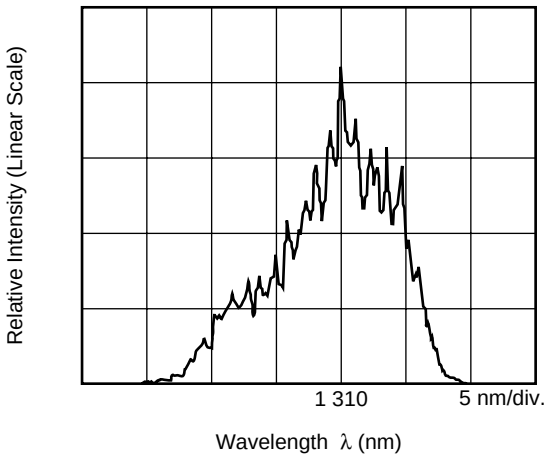
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold Current	I_{th}				80	mA
Optical Output Power from Fiber	P_f	I_{FP} = 1000 mA, PW = 10 μs, Duty = 1%	75			mW
Center Wavelength	λ_C	RMS (–20 dB), I_{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %	1 280		1 342.5	nm
Temperature Dependency of Center Wavelength	$\Delta\lambda/\Delta T$			0.35		nm/°C
Spectral Width	σ	RMS (–20 dB), I_{FP} = 1 000 mA, PW = 10 μs, Duty = 1 %			10	nm

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

OPTICAL OUTPUT POWER FROM FIBER vs. PULSED FORWARD CURRENT



SPECTRUM



Remark The graphs indicate nominal characteristics.

OTDR LD FAMILY

Part Number	Electro-Optical Characteristics (T_C = 25°C)			Conditions			Application	Package
	λ_C (nm)	P_f (mW)		I_{FP} (mA)	PW (μs)	Duty (%)		
	TYP.	MIN.	TYP.					
NX7327BF-AA	1 310	110	180	1 000	10	1	OTDR	4-pin coax. with SMF
NX7328BF-AA	1 310	70	110	400	10	1	OTDR	4-pin coax. with SMF
NX7329BB-AA	1 310	25	50	400	10	1	OTDR	4-pin coax. with SMF
NX7526BF-AA	1 550	95	145	1 000	10	1	OTDR	4-pin coax. with SMF
NX7527BF-AA	1 550	120	145	1 000	10	1	OTDR	4-pin coax. with SMF
NX7528BF-AA	1 550	60	80	400	10	1	OTDR	4-pin coax. with SMF
NX7529BB-AA	1 550	20	40	400	10	1	OTDR	4-pin coax. with SMF

REFERENCE

Document Name	Document No.
Optical semiconducrtor 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

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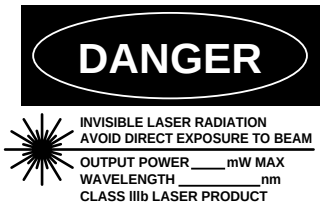
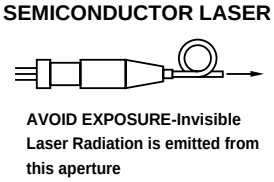
SAFETY INFORMATION ON THIS PRODUCT





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	The product contains gallium arsenide, GaAs. GaAs vapor and powder are hazardous to human health if inhaled or ingested. • Do not destroy or burn the product. • Do not cut or cleave off any part of the product. • Do not crush or chemically dissolve the product. • Do not put the product in the mouth. Follow related laws and ordinances for disposal. The product should be excluded from general industrial waste or household garbage.
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.

▶Business issue

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▶Technical issue

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