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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RENESAS

PRELIMINARY DATA SHEET

Phase-out/Discontinued

LASER DIODE

NX8312UD

1 310 nm FOR SHORT HAUL 2.5 Gb/s InGaAsP MQW-DFB LASER DIODE TOSA

DESCRIPTION

The NX8312UD is a 1 310 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode TOSA (transmitter optical sub-assembly) with InGaAs monitor PIN-PD in a receptacle type package designed for SFF/SFP transceiver with LC duplex receptacle.

★ APPLICATIONS

- STM-16 (S-16.1)
- SONET OC-48 (IR)

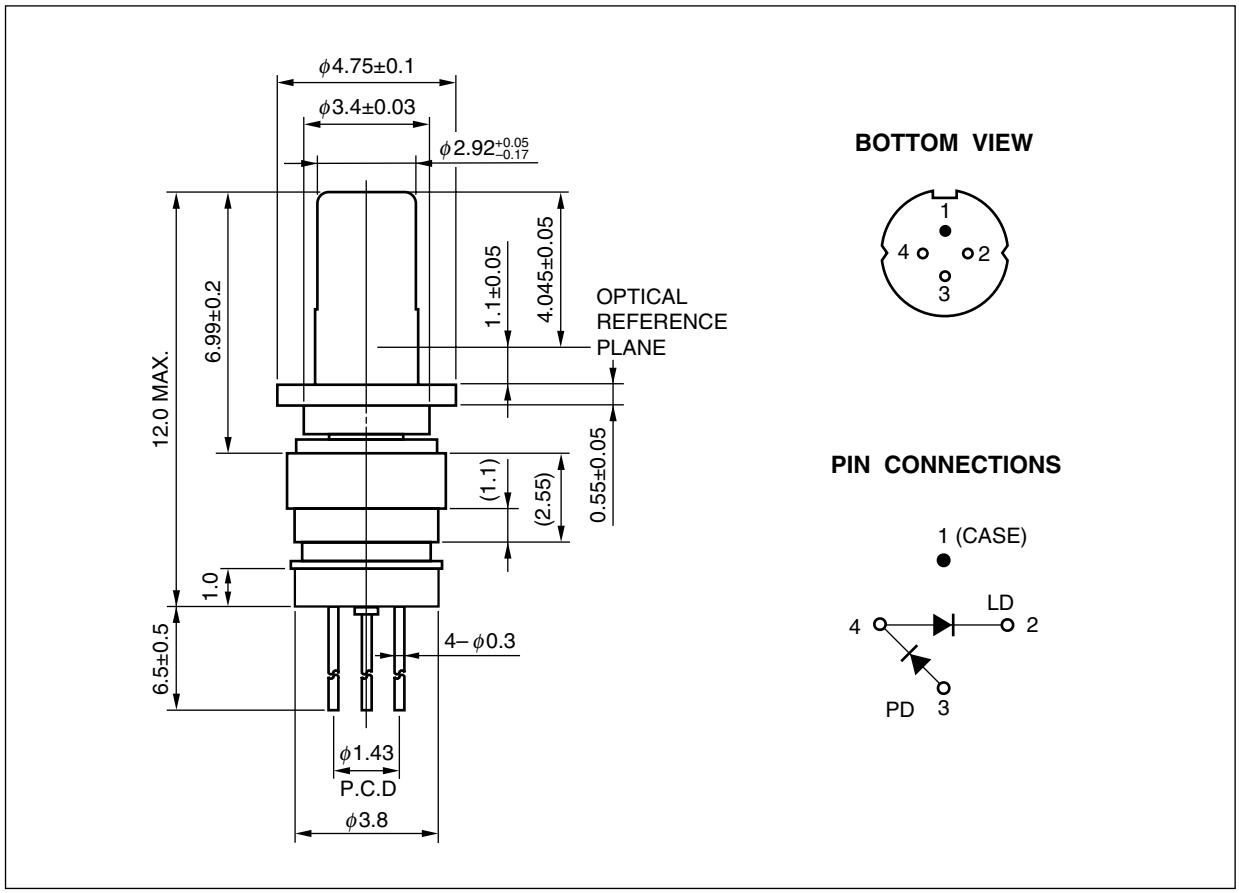
FEATURES

- Internal optical isolator
- Optical output power P_f = 1.0 mW
- Low threshold current I_{th} = 10 mA TYP. @ T_C = 25°C
- Wide operating temperature range T_C = –20 to +85°C
- InGaAs monitor PIN-PD
- Small package ϕ3.8 mm TOSA (Total length 13.0 mm MAX.)

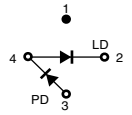
Document No. PL10182EJ02V0DS (2nd edition)
Date Published October 2004 CP(K)
Printed in Japan

The mark ★ shows major revised points.

★ **PACKAGE DIMENSIONS (UNIT: mm)**



ORDERING INFORMATION

Part Number	Package	Pin Connections
NX8312UD	ϕ3.8 mm TOSA	

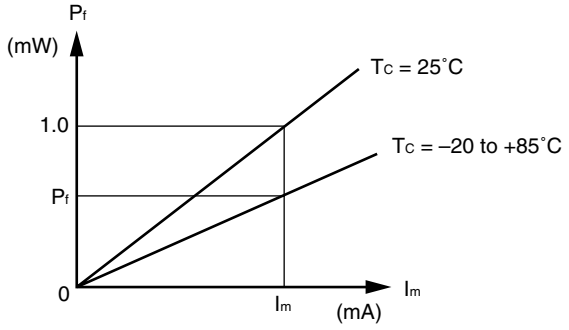
ABSOLUTE MAXIMUM RATINGS

	Parameter	Symbol	Ratings	Unit
	Optical Output Power from Fiber	P_f	5.0	mW
	Forward Current of LD	I_F	150	mA
	Reverse Voltage of LD	V_R	2.0	V
★	Forward Current of PD	I_F	2.0	mA
	Reverse Voltage of PD	V_R	15	V
	Operating Case Temperature	T_C	−20 to +85	°C
	Storage Temperature	T_{stg}	−40 to +85	°C
	Lead Soldering Temperature	T_{sld}	350 (3 sec.)	°C

ELECTRO-OPTICAL CHARACTERISTICS (T_C = –20 to +85°C, unless otherwise specified)

	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
	Operating Voltage	V_{op}	CW, P_f = 1.0 mW		1.2	1.6	V
	Threshold Current	I_{th}	CW	2		50	mA
			CW, T_C = 25°C	4	10	20	
	Optical Output Power from Fiber	P_f	CW		1.0		mW
	Modulation Current	I_{mod}	CW, P_f = 1.0 mW	7		50	mA
			CW, P_f = 1.0 mW, T_C = 25°C	9	20	30	
	Differential Efficiency	η_d	CW	0.02		0.15	W/A
			CW, T_C = 25°C	0.035	0.050	0.100	
	Peak Emission Wavelength	λ_p	CW, P_f = 1.0 mW, RMS (–20 dB)	1 280		1 335	nm
	Side Mode Suppression Ratio	SMSR	CW, P_f = 1.0 mW	30			dB
	Rise Time	t_r	$I_b = I_{th}$, 10-90%			200	ps
	Fall Time	t_f	$I_b = I_{th}$, 90-10%			200	ps
	Monitor Current	I_m	CW, V_R = 1.5 V, P_f = 0.5 mW	100		2 000	μA
	Monitor Dark Current	I_D	V_R = 1.5 V			500	nA
			V_R = 1.5 V, T_C = 25°C			50	
	Tracking Error*1	γ	CW, I_m = const. (@ P_f = 1.0 mW)	–1.5		1.5	dB
	Connector Repeatability	–	With master pigtail	–1.0		1.0	dB
★	Optical Isolation	I_s	CW, P_f = 1.0 mW	20			dB

***1** Tracking Error: γ



$$\gamma = \left| 10 \log \frac{P_f}{1.0} \right| [dB]$$

REFERENCE

Document Name	Document No.
OPTICAL SEMICONDUCTOR DEVICES FOR FIBEROPTIC COMMUNICATIONS SELECTION GUIDE	PL10161E
Opto-Electronics Devices Pamphlet	PX10160E

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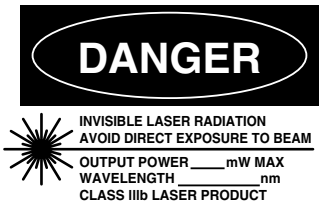
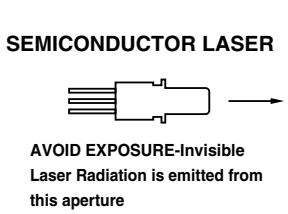
M8E 00.4-0110

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.

▶**For further information, please contact**

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