NX8350TS

LASER DIODE

1 271 to 1 331 nm AlGaInAs MQW-DFB LASER DIODE FOR 40 G BASE-LR4 APPLICATION

R08DS0025EJ0100
Rev.1.00
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DESCRIPTION

The NX8350TS is a 1 271 to 1 331 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode TOSAs (transmitter optical subassembly) with InGaAs monitor PIN-PD in an LC receptacle type package designed for CFP transceiver.

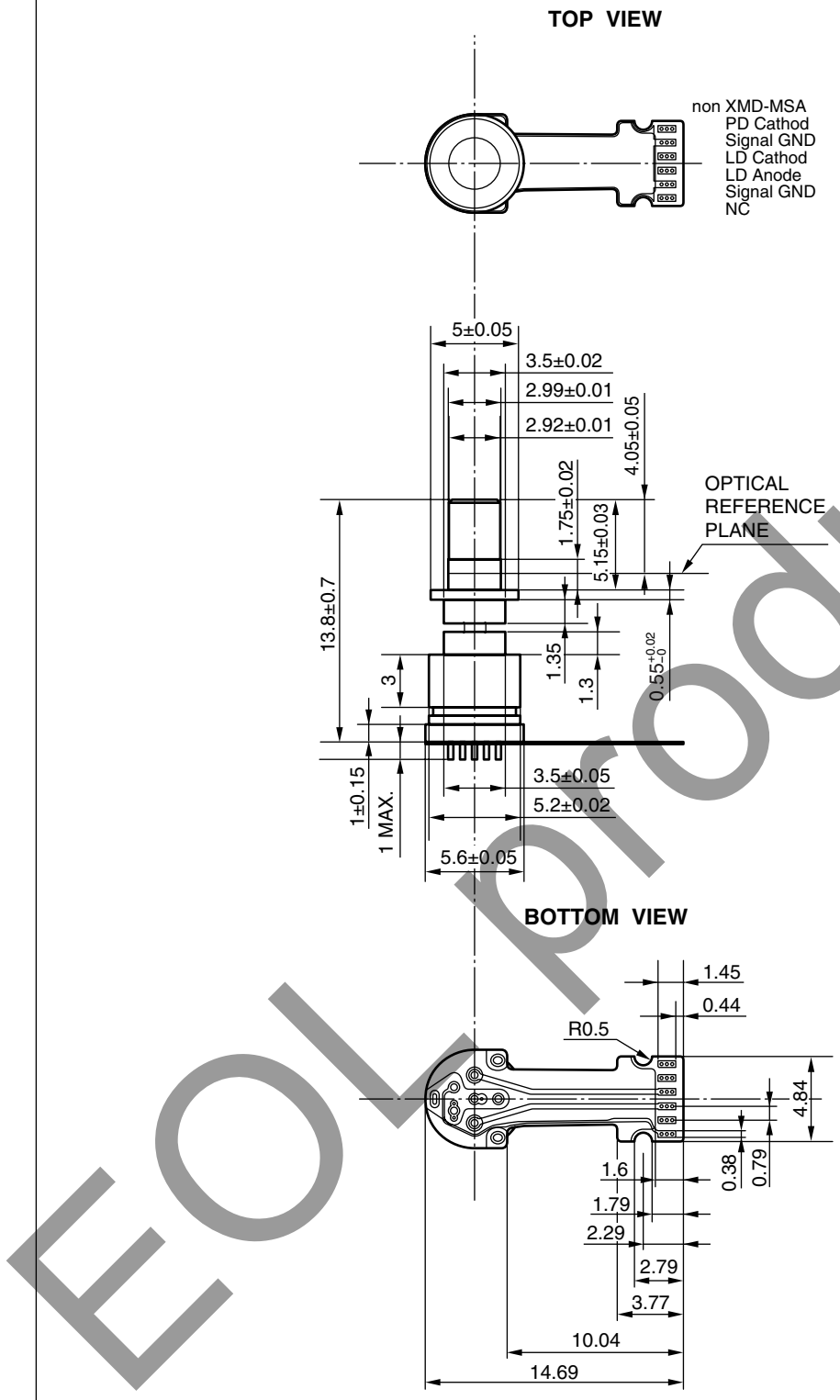
FEATURES

- Internal optical isolator
- Peak emission wavelength 1 271/1 291/1 311/1 331 nm
- Optical output power P_f = 2 dBm
- Low threshold current I_{th} = 8 mA TYP. @ T_C = 25°C
- Wide operating temperature range T_C = –5 to +85°C
- InGaAs monitor PIN-PD
- IEEE802.3ba compliant

APPLICATIONS

- 40 G BASE-LR4

PACKAGE DIMENSIONS (UNIT: mm)



Remarks1. Receptacle is electrically isolated from CAN.
2. Characteristic impedance of flexible printed circuit is 25 Ω.
3. NX8350TS has no matching resistor installed.

ORDERING INFORMATION

Part Number	Receptacle Type	Note
NX8350TSxx	LC, Electrically isolated	Differential input with short length flexible PCB, without matching resistor. xx is wavelength code. “27” means 1 271 nm. “29” means 1 291 nm. “31” means 1 311 nm. “33” means 1 331 nm.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Storage Temperature	T_{stg}	–40 to +95	°C
Operating Case Temperature	T_C	–5 to +85	°C
Forward Current of LD	I_{FLD}	150	mA
Reverse Voltage of LD	V_{RLD}	2	V
Forward Current of PD	I_{FPD}	10	mA
Reverse Voltage of PD	V_{RPD}	15	V
Soldering Temperature (Flexible Printed Circuit)	T_{sld}	260 (10 sec.)	°C
Optical Output Power	P_f	10	mW

ELECTRO-OPTICAL CHARACTERISTICS
(T_C = –5 to +85°C, BOL, unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Mean Optical Output Power	P_f			2		dBm
Peak Emission Wavelength	λ_p	CW, P_f = 2 dBm	1 264.5		1 277.5	nm
			1 284.5		1 297.5	
			1 304.5		1 317.5	
			1 324.5		1 337.5	
Side Mode Suppression Ratio	SMSR	CW, P_f = 2 dBm	30			dB
Operating Current	I_{op}	P_f = 2 dBm			70	mA
Threshold Current	I_{th}	CW, T_C = 25°C		8	15	mA
		CW	2		30	
Differential Efficiency	η_d	CW, P_f = 2 dBm, T_C = 25°C	0.055	0.069	0.085	W/A
		CW, P_f = 2 dBm	0.03		0.1	
Operation Voltage	V_{op}	CW, P_f = 2 dBm			2.0	V
Monitor Current	I_m	CW, P_f = 2 dBm	50		500	μA
Monitor Dark Current	I_D	V_R = 3.3 V, T_C = 25°C			10	nA
		V_R = 3.3 V, T_C = 85°C			100	
Monitor PD Terminal Capacitance	C_t	V_R = 3.3 V, f = 1 MHz			20	pF
Rise Time	t_r	20-80% *1		35	50	ps
Fall Time	t_f	20-80% *1		42	50	ps
Relative Intensity Noise	RIN	BR = –20 dB, IEEE802.3ba			–128	dB/Hz
Tracking Error	γ		–1.0		1.0	dB

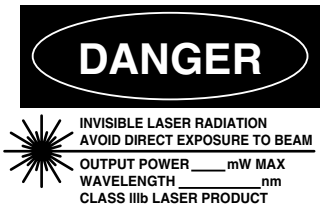
Note: *1. 10.3125 Gb/s, PRBS 2^{31}–1, NRZ, Duty Cycle = 50%, Renesas Electronics Setup.

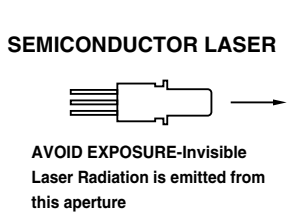
REFERENCE

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

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

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.

Revision History	NX8350TS Data Sheet

Rev.	Date	Description	
		Page	Summary
1.00	Sep 19, 2010	–	First edition issued

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Renesas Electronics America Inc.
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: +86-10-8235-1155, 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

Renesas Electronics Taiwan Co., Ltd.
7F, No. 363 Fu Shing North Road Taipei, Taiwan, R.O.C.
Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

Renesas Electronics Singapore Pte. Ltd.
1 harbourFront Avenue, #06-10, keppel Bay Tower, Singapore 098632
Tel: +65-6213-0200, Fax: +65-6278-8001

Renesas Electronics Malaysia Sdn.Bhd.
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 Lavied' or Bldg., 720-2 Yeoksam-Dong, Kangnam-Ku, Seoul 135-080, Korea
Tel: +82-2-558-3737, Fax: +82-2-558-5141

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