

NX8346TS

LASER DIODE

R08DS0035EJ0200

Rev.2.00

1 310 nm AlGaInAs MQW-DFB LASER DIODE FOR 10 Gb/s APPLICATION

Jan 21, 2011

DESCRIPTION

The NX8346TS is a 1 310 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode TOSA (transmitter optical subassembly) with InGaAs monitor PIN-PD in a receptacle type package designed for SFP+/XFP transceiver.

APPLICATIONS

- 10 G BASE-LW/LR
- 10 G Fibre Channel

FEATURES

- Internal optical isolator
- Optical output power
- Low threshold current
- Wide operating temperature range
- InGaAs monitor PIN-PD

$P_r = -3 \text{ dBm}$

$I_{th} = 8 \text{ mA TYP. @ } T_c = 25^\circ\text{C}$

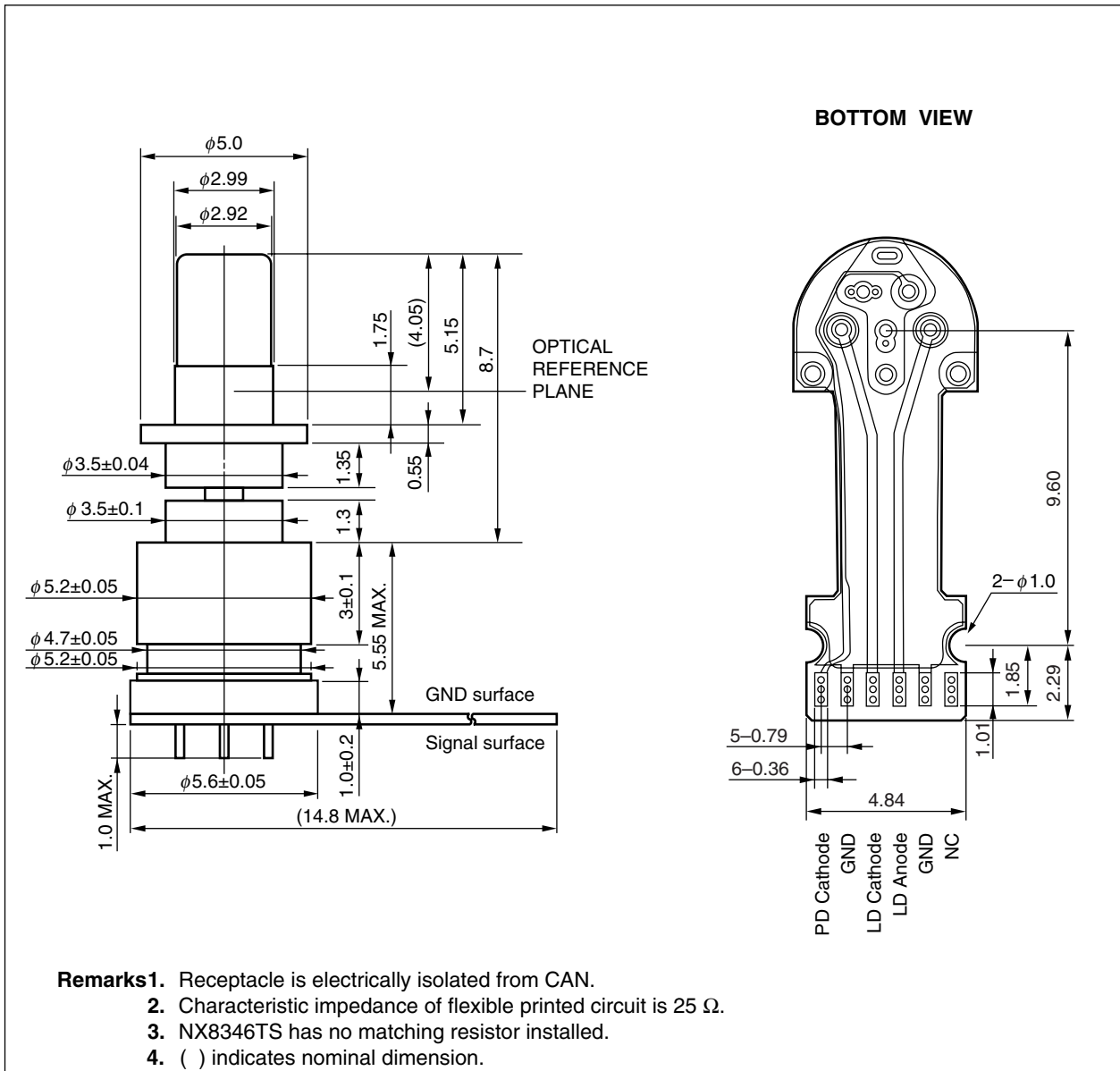
$T_c = -5 \text{ to } +95^\circ\text{C}$



The mark <R> shows major revised points.

The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

PACKAGE DIMENSIONS (UNIT: mm)



ORDERING INFORMATION

Part Number	Receptacle Type	Note
NX8346TS	LC, Electrically isolated	Differential input with short length flexible PCB, without matching resistor

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Storage Temperature	T _{stg}	-40 to +95	°C
Operating Case Temperature	T _C	-5 to +95	°C
Forward Current of LD	I _{FLD}	120	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 _{slid}	260 (10 sec.)	°C
Optical Output Power	P _f	5	mW

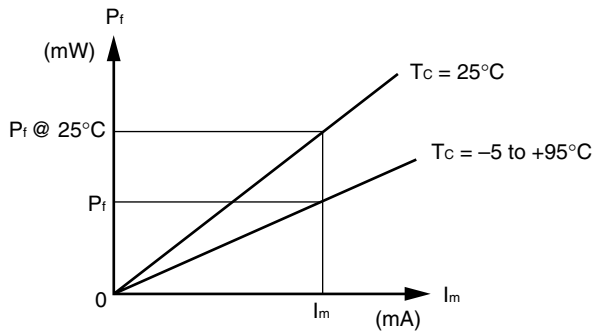
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ELECTRO-OPTICAL CHARACTERISTICS (T_c = -5 to +95°C, BOL, unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Mean Optical Output Power	P _f			-3		dBm
Peak Emission Wavelength	λ _p	CW, P _f = -3 dBm	1 260		1 355	nm
Side Mode Suppression Ratio	SMSR	CW, P _f = -3 dBm	35			dB
Threshold Current	I _{th}	CW, T _c = 25°C		8	15	mA
		CW	2		26	
Differential Efficiency	η _d	CW, P _f = -3 dBm, T _c = 25°C	0.020	0.033	0.040	W/A
		CW, P _f = -3 dBm	0.012		0.060	
Temperature Dependence of Differential Efficiency	Δη _d	$\Delta\eta_d = 10 \log \frac{\eta_d}{\eta_d (@ 25^\circ\text{C})}$	-3.5		1.5	dB
Operation Voltage	V _{op}	CW, P _f = -3 dBm	0.5		2.2	V
Monitor Current	I _m	CW, P _f = -3 dBm	70		700	μA
Monitor Dark Current	I _d	V _R = 3.3 V, T _c = 25°C			10	nA
		V _R = 3.3 V			500	
Rise Time	t _r	20-80% *1			50	ps
Fall Time	t _f	20-80% *1			50	ps
Monitor PD Terminal Capacitance	C _t	V _R = 3.3 V, f = 1 MHz		6	20	pF
Relative Intensity Noise	RIN				-128	dB/Hz
Tracking Error ²	γ		-1.0		1.0	dB

*1 9.95/10.3/10.5 Gb/s, PRBS 2³¹-1, NRZ, Duty Cycle = 50%

*2 Tracking Error: γ



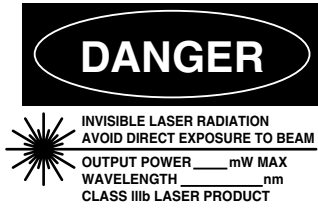
$$\gamma = \left| 10 \log \frac{P_f}{P_f @ 25^\circ\text{C}} \right| \text{ [dB]}$$

<R> REFERENCE

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

*1 Published by the former NEC Electronics Corporation.

SAFETY INFORMATION ON THIS PRODUCT



SEMICONDUCTOR LASER



**AVOID EXPOSURE- Invisible
 Laser Radiation is emitted from
 this aperture**

<p>Warning 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"> • Do not look directly into the laser beam. • Avoid exposure to the laser beam, any reflected or collimated beam.
<p>Caution 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"> • 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"> 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.
<p>Caution Optical Fiber</p>	<p>A glass-fiber is attached on the product. Handle with care.</p> <ul style="list-style-type: none"> • When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.

Revision History	NX8346TS Data Sheet
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Rev.	Date	Description	
		Page	Summary
-	Jul 2008	-	Previous No. : PL10723EJ01V0DS
2.00	Jan 21, 2011	p.5	ABSOLUTE MAXIMUM RATINGS: Reverse Voltage of PD 20 V -> 15 V
		p.7	Modification of REFERENCE

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Renesas Electronics America Inc.
2880 Scott Boulevard Santa Clara, CA 95050-2554, U.S.A.
Tel: +1-408-586-6000, Fax: +1-408-586-6130

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: +49-211-65030, 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
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: +65-6276-8001

Renesas Electronics Malaysia Sdn.Bhd.
Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jin 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