

NX8346TB

LASER DIODE

R08DS0032EJ0300

Rev.3.00

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

Dec 13, 2013

DESCRIPTION

<R> The NX8346TB is 1 310 nm Multiple Quantum Wells (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
- SONET OC-192

FEATURES

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

$P_f = -2 \text{ dBm}$

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

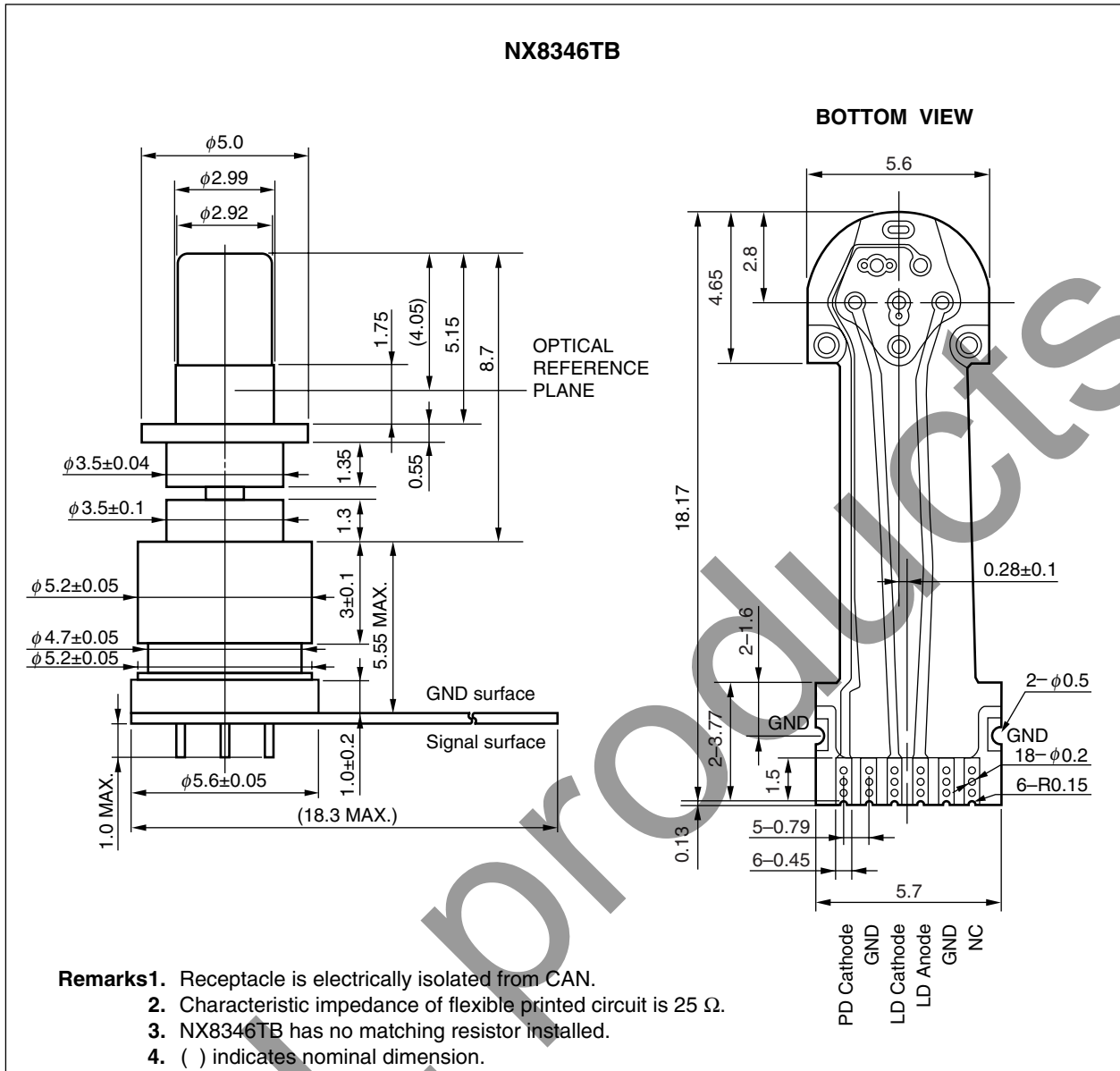
$T_c = -20 \text{ to } +95^\circ\text{C}$



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
NX8346TB	LC, Electrically isolated	Differential input with flexible PCB, without matching resistor

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ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Storage Temperature	T _{stg}	-40 to +95	°C
Operating Case Temperature	T _c	-20 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

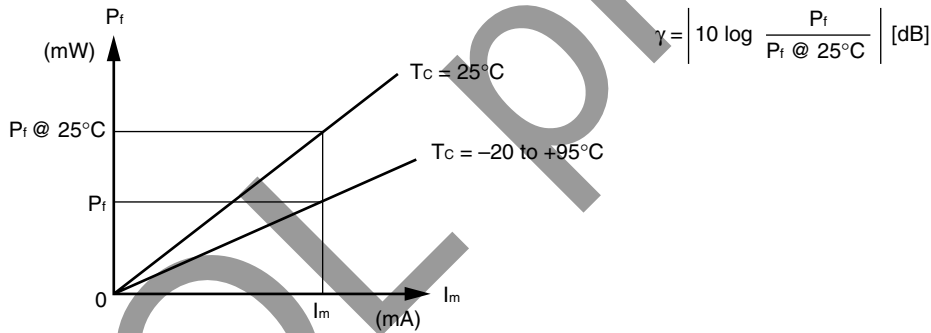
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ELECTRO-OPTICAL CHARACTERISTICS (T_c = -20 to +95°C, BOL, unless otherwise specified)

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	1 290		1 330	nm
Side Mode Suppression Ratio	SMSR	CW, P _f = -2 dBm	35			dB
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	0.020	0.025	0.040	W/A
		CW, P _f = -2 dBm	0.005		0.060	
Temperature Dependence of Differential Efficiency	Δη _d	Δη _d = 10 log $\frac{\eta_d}{\eta_d (@ 25^\circ\text{C})}$	-3.5		1.5	dB
Operation Voltage	V _{op}	CW, P _f = -2 dBm	0.5		2.2	V
Monitor Current	I _m	CW, P _f = -2 dBm	100		1 000	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		*1		-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



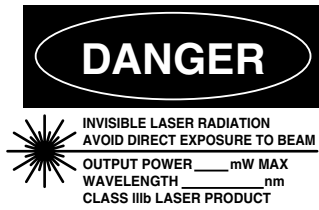
REFERENCE

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

*1 Published by the former NEC Electronics Corporation.

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SAFETY INFORMATION ON THIS PRODUCT



DANGER

INVISIBLE LASER RADIATION
AVOID DIRECT EXPOSURE TO BEAM

OUTPUT POWER _____mW MAX
WAVELENGTH _____nm
CLASS IIIb LASER 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	NX8346TB Data Sheet
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Rev.	Date	Description	
		Page	Summary
-	Jul 2008	-	Previous No. : PL10722EJ01V0DS
2.00	Dec 18, 2010	p.5	ABSOLUTE MAXIMUM RATINGS: Reverse Voltage of PD 20 V -> 15 V
		p.7	Modification of REFERENCE
3.00	Dec 13, 2013	Throughout	Deletion of NX8346TY

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