

NX6353EP Series

Data Sheet

LASER DIODE

1 270/1 290/1 310/1 330/1 350 nm AlGaInAs MQW-DFB LASER DIODE

FOR 9.8Gbps CPRI, 10G Ethernet APPLICATION

R08DS0089EJ0100

Rev.1.00

Feb 25, 2013

DESCRIPTION

The NX6353EP series is a 1 270/1 290/1 310/1 330/1 350 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode with InGaAs monitor PIN-PD.

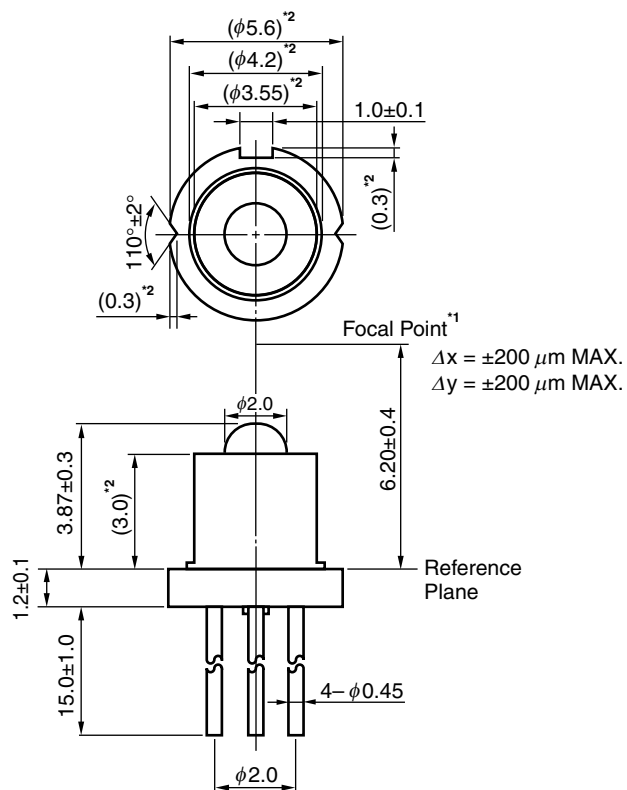
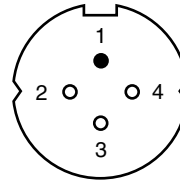
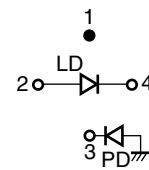
APPLICATIONS

- 9.8 Gbps CPRI
- 10G Ethernet

FEATURES

- | | |
|------------------------------------|---|
| • Optical output power | $P_O = 8.5 \text{ mW}$ |
| • Low threshold current | $I_{th} = 7 \text{ mA}$ |
| • Differential efficiency | $\eta_d = 0.35 \text{ W/A}$ |
| • Wide operating temperature range | $T_C = -40 \text{ to } +85^\circ\text{C}$ |
| • InGaAs monitor PIN-PD | |
| • CAN package | $\phi 5.6 \text{ mm}$ |
| • Focal point | 6.2 mm |

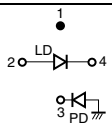


PACKAGE DIMENSIONS (UNIT: mm)**BOTTOM VIEW****PIN CONNECTIONS**

^{*1} Focal Point: A point to get maximum optical output power from fiber.

^{*2} () indicates nominal dimension.

ORDERING INFORMATION

Part Number	Package	Pin Connections
NX6353EPxx*1-AZ	4-pin CAN with ball lens cap	

Note: 1. The last two digits ("xx") of Part Number indicates Wavelength Code.
The relationships between the code and wavelength are as follows.

WAVELENGTH CODE	WAVELENGTH (nm)
27	1 270
29	1 290
31	1 310
33	1 330
35	1 350

Remarks 1. The color of lens cap might be observed differently.
2. The hermetic test will be performed as AQL 1.0%.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Optical Output Power	P_O	15	mW
Forward Current of LD	I_F	120	mA
Reverse Voltage of LD	V_R	2.0	V
Forward Current of PD	I_F	10.0	mA
Reverse Voltage of PD	V_R	15	V
Operating Case Temperature	T_C	-40 to +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to +95	$^\circ\text{C}$
Lead Soldering Temperature	T_{slid}	350 (3 sec.)	$^\circ\text{C}$
Relative Humidity (noncondensing)	RH	85	%

RECOMMENDED LD DRIVE CURRENT AT MODULE LEVEL

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Bias Current	I_{bias}	$T_C = 25^\circ\text{C}$	–	30	–	mA
		$T_C = 85^\circ\text{C}$	–	–	70	

ELECTRO-OPTICAL CHARACTERISTICS**($T_C = -40$ to $+85^\circ\text{C}$, CW, BOL, unless otherwise specified)**

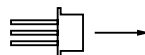
Parameter	Symbol	Conditions		MIN.	TYP.	MAX.	Unit
Signaling Rate				–	9.8304	–	Gb/s
Optical Output Power	P _O			–	8.5	–	mW
Operating Voltage	V _{op}	P _O = 8.5 mW		–	–	2.0	V
Threshold Current	I _{th}	T _C = 25°C		–	7	15	mA
				–	–	30	
Differential Efficiency	η _d	P _O = 8.5 mW, T _C = 25°C		0.23	–	–	W/A
		P _O = 8.5 mW		0.13	–	–	
Peak Emission Wavelength	λ _p	P _O = 8.5 mW	NX6353EP27	1 260	–	1 280	nm
			NX6353EP29	1 280	–	1 300	
			NX6353EP31	1 300	–	1 320	
			NX6353EP33	1 320	–	1 340	
			NX6353EP35	1 340		1 360	
Side Mode Suppression Ratio	SMSR	P _O = 8.5 mW		35	–	–	dB
Rise Time	t _r	20-80% ^{*1}		–	–	50	ps
Fall Time	t _f	80-20% ^{*1}		–	–	50	ps
Monitor Current	I _m	V _R = 1.5 V, P _O = 8.5 mW		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		–	–	100	
Monitor PD Terminal Capacitance	C _t	V _R = 3.3 V, f = 1 MHz		–	–	20	pF

Note: 1. 9.8304 Gb/s, PRBS 2³¹ – 1, NRZ, Duty Cycle = 50%

SAFETY INFORMATION ON THIS PRODUCT



SEMICONDUCTOR LASER



AVOID EXPOSURE-Invisible
Laser Radiation is emitted from
this aperture

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.

Revision History	NX6353EP Series Data Sheet
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Rev.	Date	Description	
		Page	Summary
1.00	Feb 25, 2013	–	First edition issued

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