CEL

NEC's 1310 nm AlGaInAs MQW-DFB TOSA FOR 10 Gb/s APPLICATION

NX8341 Series

FEATURES

- **INTERNAL OPTICAL ISOLATOR**
- **OPTICAL OUTPUT POWER:**
  Pf = -2 dBm
- **LOW THRESHOLD CURRENT**
  Ith = 8 mA TYP @ T_C = 25°C
- **WIDE OPERATING TEMPERATURE RANGE:**
  T_C = -5 to +85°C
- **InGaAs MONITOR PIN-PD**

NX8341UH

NX8341UN

APPLICATIONS

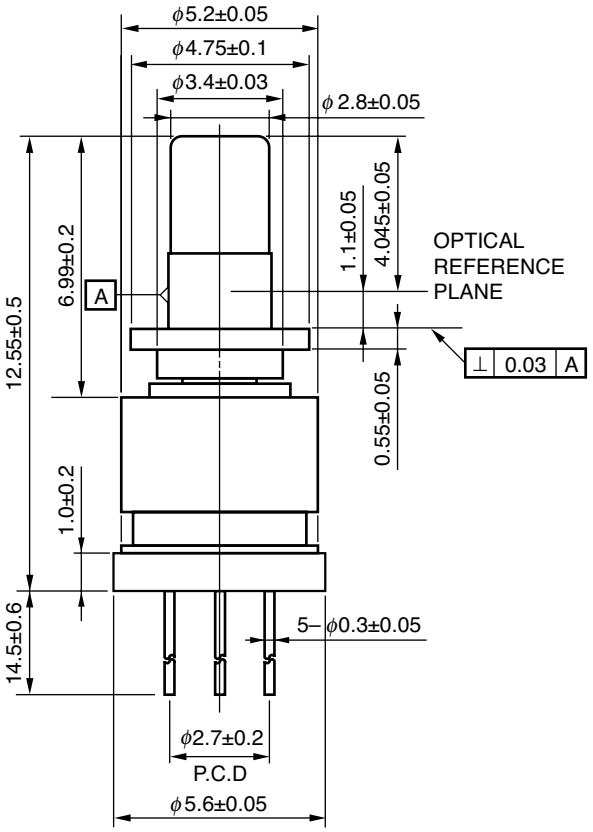
- **10 G BASE-LW/LR**
- **10 G Fiber Channel**

DESCRIPTION

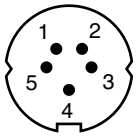
NEC's NX8341 Series is a 1310 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode TOSA (transmitter optical subassembly) with InGaAs monitor PIN-PD in a receptacle type package designed for XENPAK/XPAK/X2/XFP transceiver.

PACKAGE DIMENSIONS (UNIT: mm)

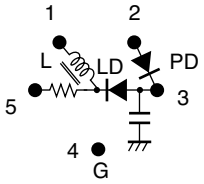
NX8341UH



BOTTOM VIEW

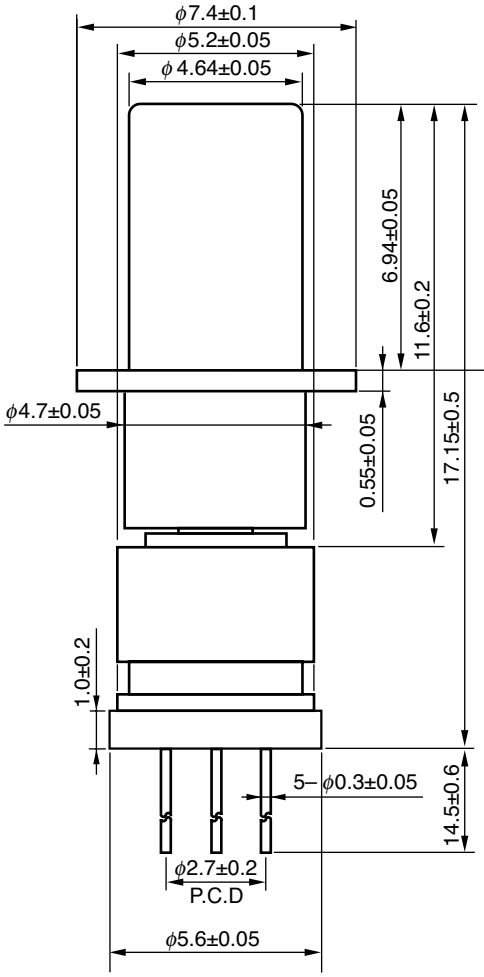


PIN CONNECTIONS

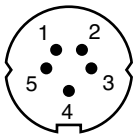


PACKAGE DIMENSIONS (UNIT: mm)

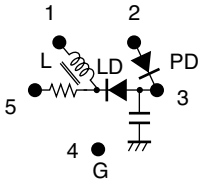
NX8341UN



BOTTOM VIEW



PIN CONNECTIONS



ORDERING INFORMATION

PART NUMBER	RECEPTACLE TYPE	NOTE
NX8341UH-AZ*	LC	Single-ended
NX8341UN-AZ*	SC	Single-ended

***NOTE:**
Please refer to the last page of this data sheet, “Compliance with EU Directives” for Pb-Free RoHS Compliance Infomation.

ABSOLUTE MAXIMUM RATINGS

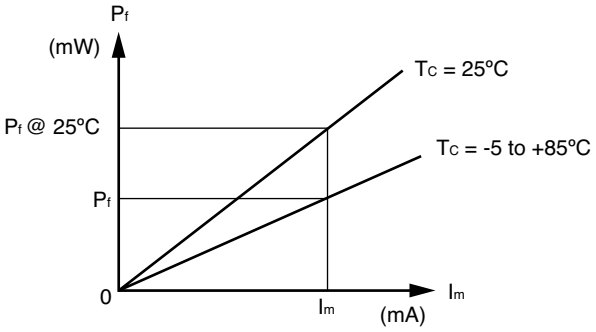
PARAMETER	SYMBOL	RATINGS	UNIT
Storage Temperature	T_{stg}	–40 to +85	°C
Operating Case Temperature	T_C	–5 to +85	°C
Forward Current of LD	I_{FLD}	120	mA
Reverse Voltage of LD	V_{RLD}	2	V
Forward Current of PD	I_{FPD}	10	mA
Reverse Voltage of PD	V_{RPD}	20	V
Lead Soldering Temperature	T_{sld}	350 (3.5 sec.)	°C
Optical Output Power	P_f	5	mW

ELECTRO-OPTICAL CHARACTERISTICS (T_C = -5 to +85 ºC, BOL, unless otherwise specificed)

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	30			dB
Threshold Current	I_{th}	CW, T_C = 25°C		8	20	mA
		CW	2		40	
Differential Efficiency	η_d	CW, P_f = –2 dBm, T_C = 25°C	0.02	0.025	0.04	W/A
		CW, P_f = –2 dBm	0.005		0.05	
Operation Voltage	V_{op}	CW, P_f = –2 dBm			2	V
Monitor Current	I_m	P_f = –2 dBm, V_R = 1.5 V ***1**	90		700	μA
Monitor Dark Current	I_D	V_R = 1.5 V, T_C = 25°C			50	nA
		V_R = 1.5 V			500	
Rise Time	t_r	20-80% ***1**		30	50	ps
Fall Time	t_f	20-80% ***1**		40	50	ps
Extinction Ratio	Ex	10 GbE, 10 G FC ***1**	4	5		dB
Tracking Error***2**	γ		–1.0		1.0	dB
Input Impedance	Z_{in}			25		Ω
Connector Repeatability	CR	With master pigtail	–1.0		1.0	dB

***1** 9.95/10.3/10.5 Gb/s, PRBS 2^{31}–1, NRZ, Duty Cycle = 50%

***2** Tracking Error: γ



$$\gamma = \left| 10 \log \frac{P_f}{P_f @ 25ºC} \right| [dB]$$

Life Support Applications
These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

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Subject: Compliance with EU Directives

CEL certifies, to its knowledge, that semiconductor and laser products detailed below are compliant with the requirements of European Union (EU) Directive 2002/95/EC Restriction on Use of Hazardous Substances in electrical and electronic equipment (RoHS) and the requirements of EU Directive 2003/11/EC Restriction on Penta and Octa BDE.

CEL Pb-free products have the same base part number with a suffix added. The suffix –A indicates that the device is Pb-free. The –AZ suffix is used to designate devices containing Pb which are exempted from the requirement of RoHS directive (*). In all cases the devices have Pb-free terminals. All devices with these suffixes meet the requirements of the RoHS directive.

This status is based on CEL's understanding of the EU Directives and knowledge of the materials that go into its products as of the date of disclosure of this information.

Restricted Substance per RoHS	Concentration Limit per RoHS (values are not yet fixed)	Concentration contained in CEL devices	
Lead (Pb)	< 1000 PPM	-A	-AZ
		Not Detected	(*)
Mercury	< 1000 PPM	Not Detected	
Cadmium	< 100 PPM	Not Detected	
Hexavalent Chromium	< 1000 PPM	Not Detected	
PBB	< 1000 PPM	Not Detected	
PBDE	< 1000 PPM	Not Detected	

If you should have any additional questions regarding our devices and compliance to environmental standards, please do not hesitate to contact your local representative.