

PRELIMINARY DATA SHEET

NEC

1310 nm FOR LONG HAUL 156 Mb/s InGaAsP MQW-FP LASER DIODE TOSA

**NX7314U
SERIES****FEATURES**

- **FORS DH L1.1**, SONET OC-3(IR)
- **OPTICAL OUTPUT POWER:**
 $P_f = 1.0$ mW
- **LOW THRESHOLD CURRENT**
 $I_{th} = 20$ mA MAX
- **WIDE OPERATING TEMPERATURE RANGE:**
 -40 to $+85^\circ\text{C}$
- **InGaAs MONITOR PIN-PD**
- **SMALL PACKAGE**
 $\varnothing 3.8$ mm can package based TOSA
- **BASED ON TELCORDIA TA-NWT-00983**

DESCRIPTION

The NX7314U Series is a 1310 nm Multiple Quantum Well (MQW) structured Fabry-Perot (FP) laser diode transmitter optical subassembly (TOSA) with InGaAs monitor in a receptacle type package designed for LC type SFF/SFP transceiver modules. These devices are ideal for Synchronous Digital Hierarchy (SDH) systems, STM-1 LONG HAUL L-1.1, ITU-T recommendations, and SONET OC-3(LR).

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

PART NUMBER			NX7314U Series		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
V_{OP}	Operating Voltage, CW, $P_f = 1.0$ mW	V	—	1.2	1.5
I_{TH}	Threshold Current	CW, $T_c = 25^\circ\text{C}$	4	—	20
		CW	2	—	50
η_d	Differential Efficiency	CW, $T_c = 25^\circ\text{C}$	0.03	0.10	0.13
		CW	0.02	—	0.20
P_f	Optical Output Power, CW	mW	—	1.0	—
I_{MOD}	Modulation Current	CW, $P_f = 1.0$ mW, $T_c = 25^\circ\text{C}$	8	10	35
		CW, $P_f = 1.0$ mW	5	—	50
λ_c	Center Wavelength, CW, $P_f = 1.0$ mW, RMS (-20 dB)	nm	1263	—	1360
σ	Spectral Width, CW, $P_f = 1.0$ mW, RMS (-20 dB)	nm	—	—	3.0
t_r	Rise Time, $I_B = I_{TH}$, 10 to 90%	ns	—	—	0.5
t_f	Fall Time, $I_B = I_{TH}$, 90 to 10%	ns	—	—	0.5
I_m	Monitor Current, CW, $P_f = 0.5$ mW, $V_R = 1.5$ V	μA	100	—	1000
I_D	Monitor Dark Current	$V_R = 1.5$ V, $T_c = 25^\circ\text{C}$	—	—	50
		$V_R = 1.5$ V	—	—	500
γ	Tracking Error, CW, $I_m = \text{const.}$ ($P_f = 1.0$ mW)	dB	-1.5	—	1.5
	Connector Repeatability, master pigtail	dB	-1.0	—	1.0

ABSOLUTE MAXIMUM RATINGS¹

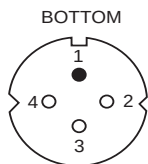
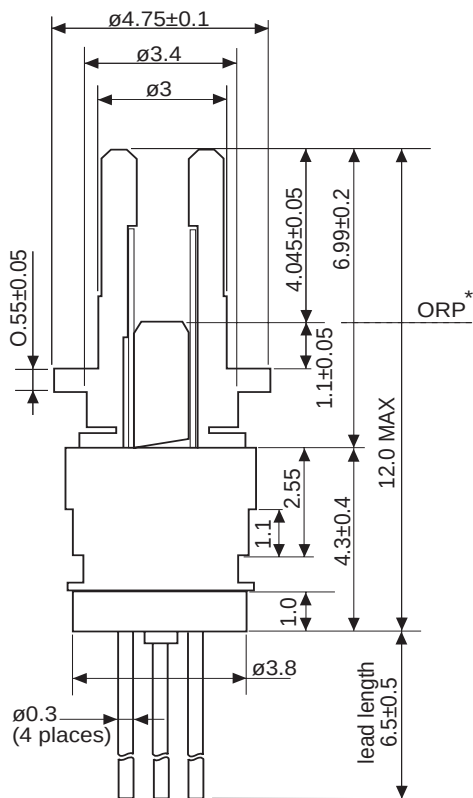
(T_c = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
P _f	Optical Output Power	mW	10
I _F	Forward Current of LD	mA	150
V _R	Reverse Voltage of LD	V	2.0
I _F	Forward Current of PD	mA	10
V _R	Reverse Voltage of PD	V	20
T _c	Operating Case Temperature	°C	-40 to +85
T _{STG}	Storage Temperature	°C	-40 to +85
T _{SLD}	Lead Soldering Temperature (10 s)	°C	350 (3 sec.)
RH	Relative Humidity (noncondensing)	%	85

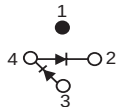
Note:

1. Operation in excess of any one of these parameters may result in permanent damage.

OUTLINE DIMENSIONS (Units in mm)

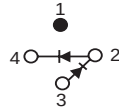


NX7314UA
Standard
Pinout
(CASE)



1. Case
2. LD Cathode
3. PD Anode
4. LD Anode & PD Cathode

NX7314UB
Optional
Pinout
(CASE)



1. Case
2. LD Anode & PD Cathode
3. PD Anode
4. LD Cathode

*ORP: Optical Reference Plane

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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