

PRELIMINARY DATA SHEET

NEC

1310 nm FOR SHORT HAUL MQW 156 Mb/s and 622 Mb/s InGaAsP MQW-FP LASER DIODE TOSA

**NX7312U
SERIES****FEATURES**

- **FOR MAN AND LAN APPLICATIONS**
SONET OC-3(IR), OC-12(IR) AND SDH S-1.1, S-4.1
- **OPTICAL OUTPUT POWER:**
 $P_f = 0.2 \text{ mW}$
- **LOW THRESHOLD CURRENT**
 $I_{th} = 20 \text{ mA MAX}$
- **WIDE OPERATING TEMPERATURE RANGE:**
-40 to +85°C
- **InGaAs MONITOR PIN-PD**
- **SMALL PACKAGE**
ø3.8 mm can package based TOSA
- **BASED ON TELCORDIA TA-NWT-00983**

DESCRIPTION

The NX7312U 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, short haul STM-1 and short haul STM-4, ITU-T recommendations, and SONET OC-3(IR) and OC-12(IR).

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

PART NUMBER				NX7312U Series		
SYMBOLS	PARAMETERS AND CONDITIONS		UNITS	MIN	TYP	MAX
VOP	Operating Voltage, CW, P _f = 0.2 mW		V	—	1.2	1.5
I _{TH}	Threshold Current	CW, T _c = 25°C	mA	4	—	20
		CW	mA	2	—	50
η _d	ifferential Efficiency	CW, T _c = 25°C	W/A	0.008	0.020	0.025
		CW	W/A	0.005	—	0.040
P _f	Optical Output Power, CW		mW	—	0.2	—
I _{MOD}	Modulation Current	CW, P _f = 0.2 mW, T _c = 25°C	mA	8	10	25
		CW, P _f = 0.2 mW	mA	5	—	40
λ _c	Center Emission Wavelength, CW, P _f = 0.2 mW, RMS (-20 dB)		nm	1274	—	1356
σ	Spectral Width, CW, P _f = 0.2 mW, RMS (-20 dB)		nm	—	—	2.5
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 = 0.1 mW, V _R = 1.5 V		μA	100	—	1000
I _D	Monitor Dark Current	V _R = 1.5 V, T _c = 25 °C	nA	—	—	50
		V _R = 1.5 V	nA	—	—	500
γ	Tracking Error, CW, I _m = const. (P _f = 0.2 mW)		dB	-1.5	—	1.5
	Connector Repeatability, master pigtail		dB	-1.0	—	1.0

NX7312U SERIES

ABSOLUTE MAXIMUM RATINGS¹

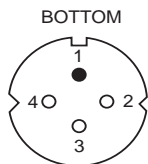
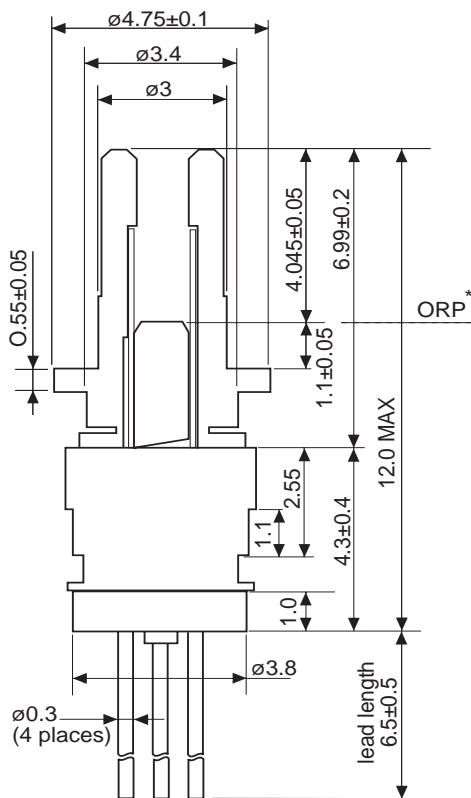
(T_c = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
P _f	Optical Output Power	mW	2.0
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

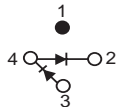
Note:

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

OUTLINE DIMENSIONS (Units in mm)

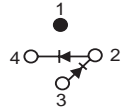


NX7312UA
Standard
Pinout
(CASE)



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

NX7312UB
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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CEL CALIFORNIA EASTERN LABORATORIES • Headquarters • 4590 Patrick Henry Drive • Santa Clara, CA 95054-1817 • (408) 988-3500 • Telex 34-6393 • FAX (408) 988-0279
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