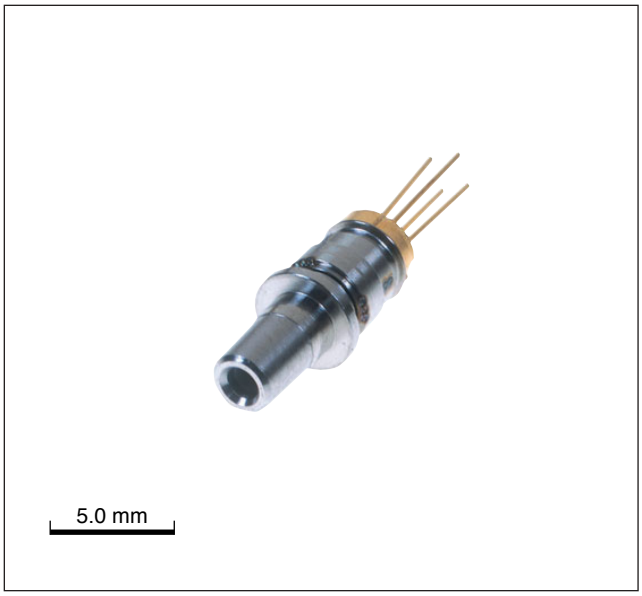
CEL

NEC's 1550 nm InGaAsP MQW-DFB TOSA FOR LONG HAUL 2.5 Gb/s APPLICATIONS

NX8511UD

FEATURES

- **PEAK EMISSION WAVELENGTH:**
  λ_p = 1 550 nm
- **OPTICAL OUTPUT POWER:**
  P_f = 2.0 mW
- **WIDE OPERATING TEMPERATURE RANGE:**
  T_C = –20 to +85°C
- **SIDE MODE SUPPRESSION RATIO:**
  SMSR = 40 dB
- **INGAAS MONITOR PIN-PD**
- **INTERNAL OPTICAL ISOLATOR**
- **BASED ON TELCORDIA RELIABILITY**

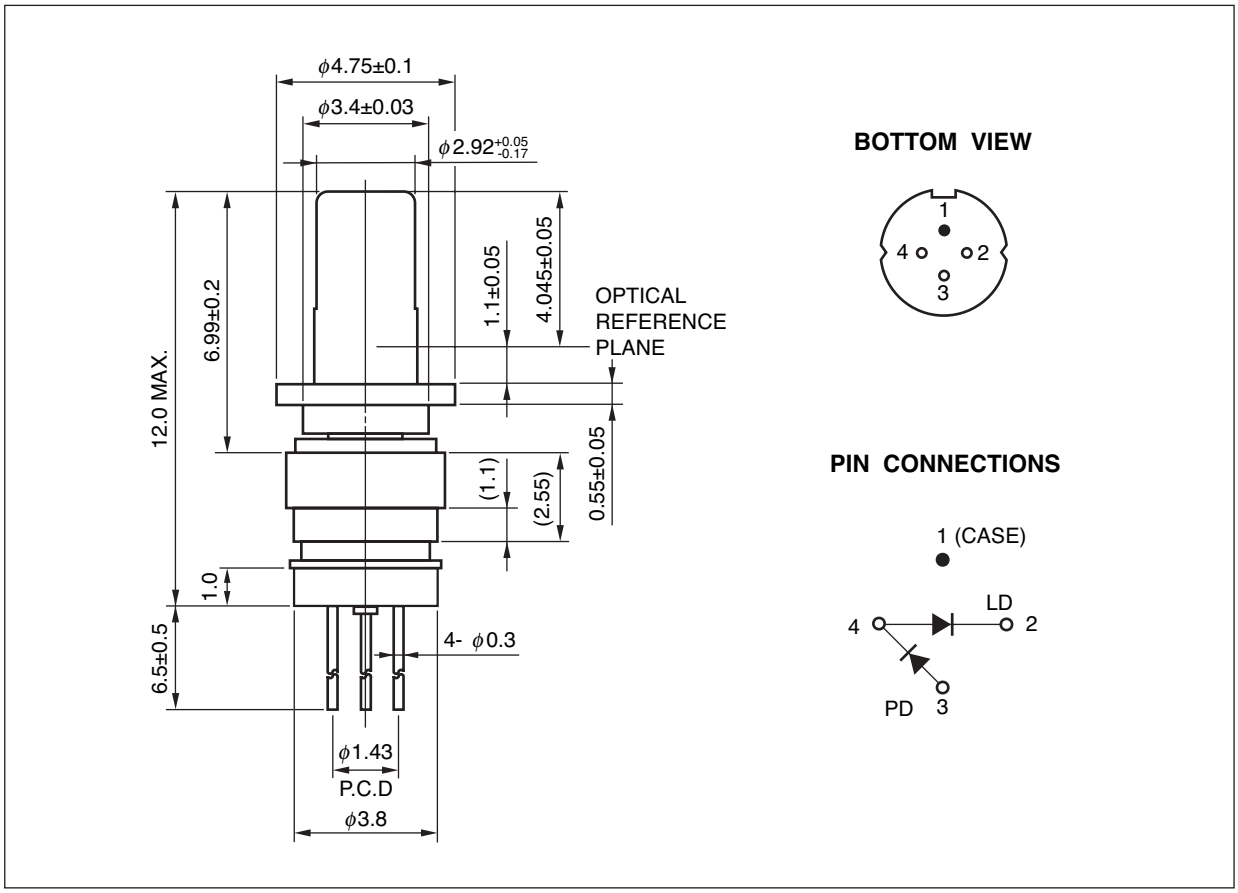


DESCRIPTION

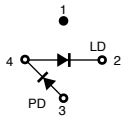
NEC's NX8511UD is a 1 550 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode TOSA (transmitter optical sub-assembly) with InGaAs monitor PIN-PD in a receptacle type package designed for SFF/SFP transceiver with LC duplex receptacle.

This device is ideal for Synchronous Digital Hierarchy (SDH) system, long haul STM-16 (L-16.2), ITU-T recommendations, and SONET OC-48 (LR-2).

PACKAGE DIMENSIONS (UNIT : mm)



ORDERING INFORMATION

PART NUMBER	PACKAGE	PIN CONNECTIONS
NX8511UD	φ 3.8 mm TOSA	

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Optical Output Power from Fiber	P_f	5.0	mW
Forward Current of LD	I_F	150	mA
Reverse Voltage of LD	V_R	2.0	V
Forward Current of PD	I_F	2.0	mA
Reverse Voltage of PD	V_R	15	V
Operating Case Temperature	T_C	–20 to +85	°C
Storage Temperature	T_{stg}	–40 to +85	°C
Lead Soldering Temperature	T_{sld}	350 (3 sec.)	°C
Relative Humidity (noncondensing)	RH	85	%

ELECTRO-OPTICAL CHARACTERISTICS (T_C = –20 to +85°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Optical Output Power from Fiber	P_f	CW		2.0		mW
Operating Voltage	V_{op}	P_f = 2.0 mW		1.1	1.6	V
Threshold Current	I_{th}	T_C = 25°C		10	20	mA
					50	
Threshold Output Power	P_{th}	$I_F = I_{th}$			100	μW
Differential Efficiency	η_d	P_f = 2.0 mW, T_C = 25°C	0.07	0.1		W/A
		P_f = 2.0 mW	0.04			
Peak Emission Wavelength	λ_p	CW, P_f = 2.0 mW	1 530	1 550	1 570	nm
Side Mode Suppression Ratio	SMSR	P_f = 2.0 mW	30	40		dB
Rise Time	t_r	20-80%, P_{pk} = 2.0 mW, $I_F = I_{th}$			100	ps
Fall Time	t_f	80-20%, P_{pk} = 2.0 mW, $I_F = I_{th}$			150	ps
Monitor Current	I_m	V_R = 1.5 V, P_f = 1.0 mW	100	500	1 000	μA
Monitor Dark Current	I_D	V_R = 1.5 V, T_C = 25°C		0.1	50	nA
		V_R = 1.5 V		10	500	
Tracking Error	γ	I_m = const.	–1.0		1.0	dB
Connector Repeatability	–	With master pigtail	–1.0		1.0	dB