

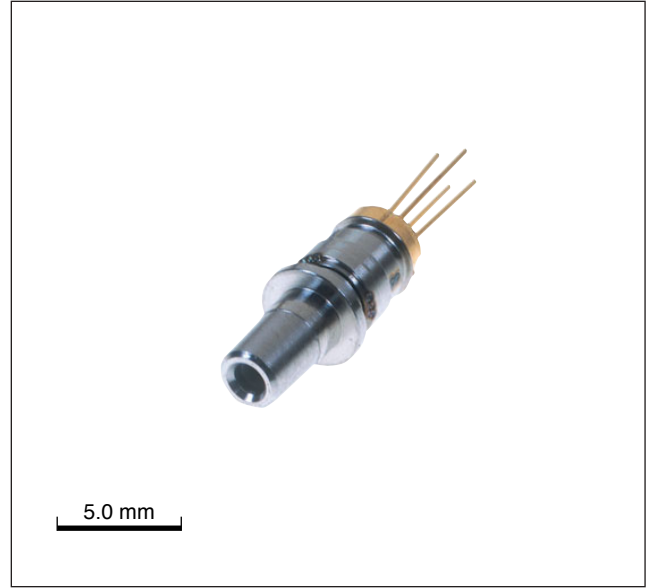


**NEC's 1550 nm InGaAsP
MQW-DFB TOSA FOR LONG HAUL
2.5 Gb/s APPLICATIONS**

NX8511UD

FEATURES

- **PEAK EMISSION WAVELENGTH:**
 $\lambda_p = 1\,550\text{ nm}$
- **OPTICAL OUTPUT POWER:**
 $P_f = 2.0\text{ mW}$
- **WIDE OPERATING TEMPERATURE RANGE:**
 $T_c = -20\text{ to }+85^\circ\text{C}$
- **SIDE MODE SUPPRESSION RATIO:**
 $\text{SMSR} = 40\text{ dB}$
- **INGAAS MONITOR PIN-PD**
- **INTERNAL OPTICAL ISOLATOR**
- **BASED ON TELCORDIA RELIABILITY**

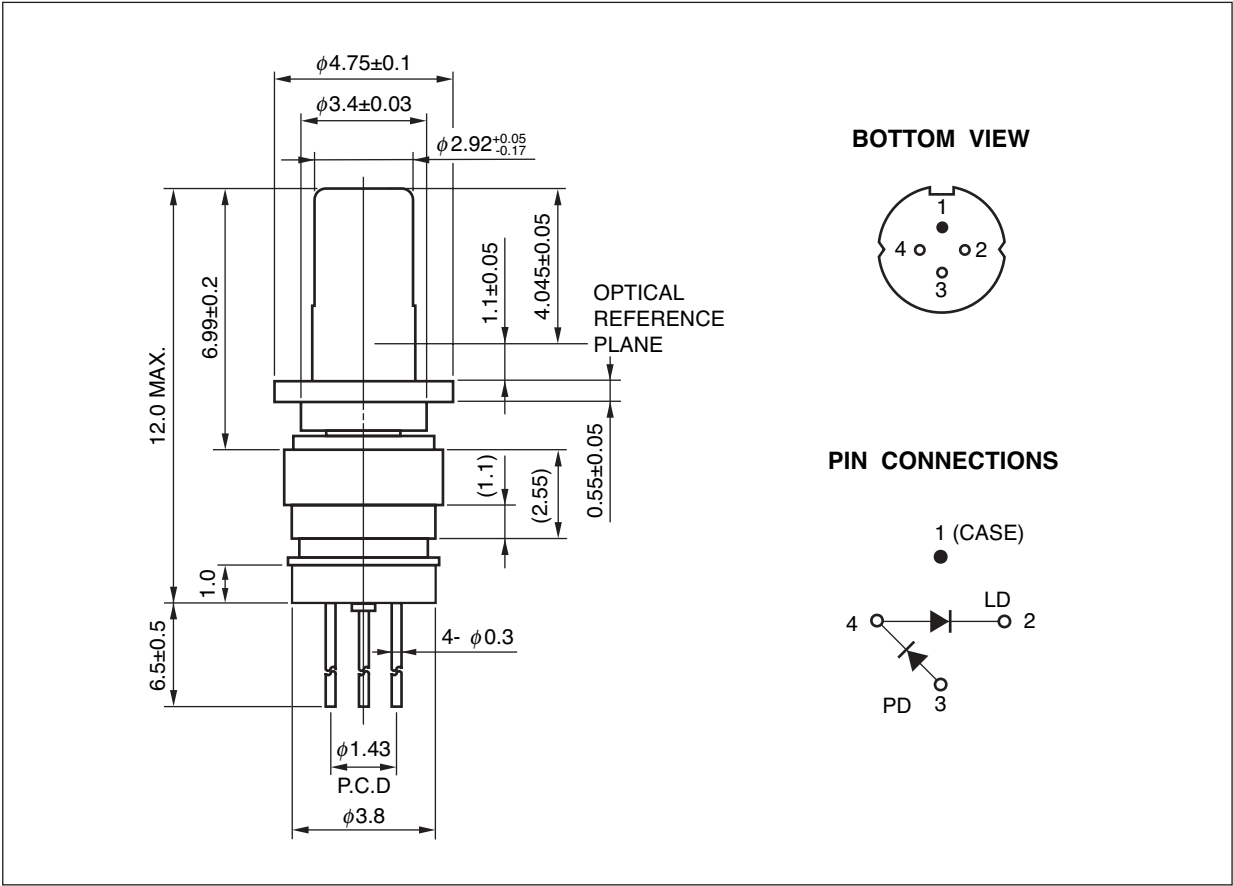


DESCRIPTION

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 $+85^\circ\text{C}$, 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}	$T_C = 25^\circ\text{C}$		10	20	mA
					50	
Threshold Output Power	P_{th}	$I_F = I_{th}$			100	μW
Differential Efficiency	η_d	$P_f = 2.0$ mW, $T_C = 25^\circ\text{C}$	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, $T_C = 25^\circ\text{C}$		0.1	50	nA
		$V_R = 1.5$ V		10	500	
Tracking Error	γ	$I_m = \text{const.}$	-1.0		1.0	dB
Connector Repeatability	-	With master pigtail	-1.0		1.0	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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