

**1 470 TO 1 610 nm FOR CWDM 2.5 Gb/s
InGaAsP MQW-DFB LASER DIODE TOSA****DESCRIPTION**

The NX8517XC is a 1 470 to 1 610 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 2.5 Gb/s CWDM application.

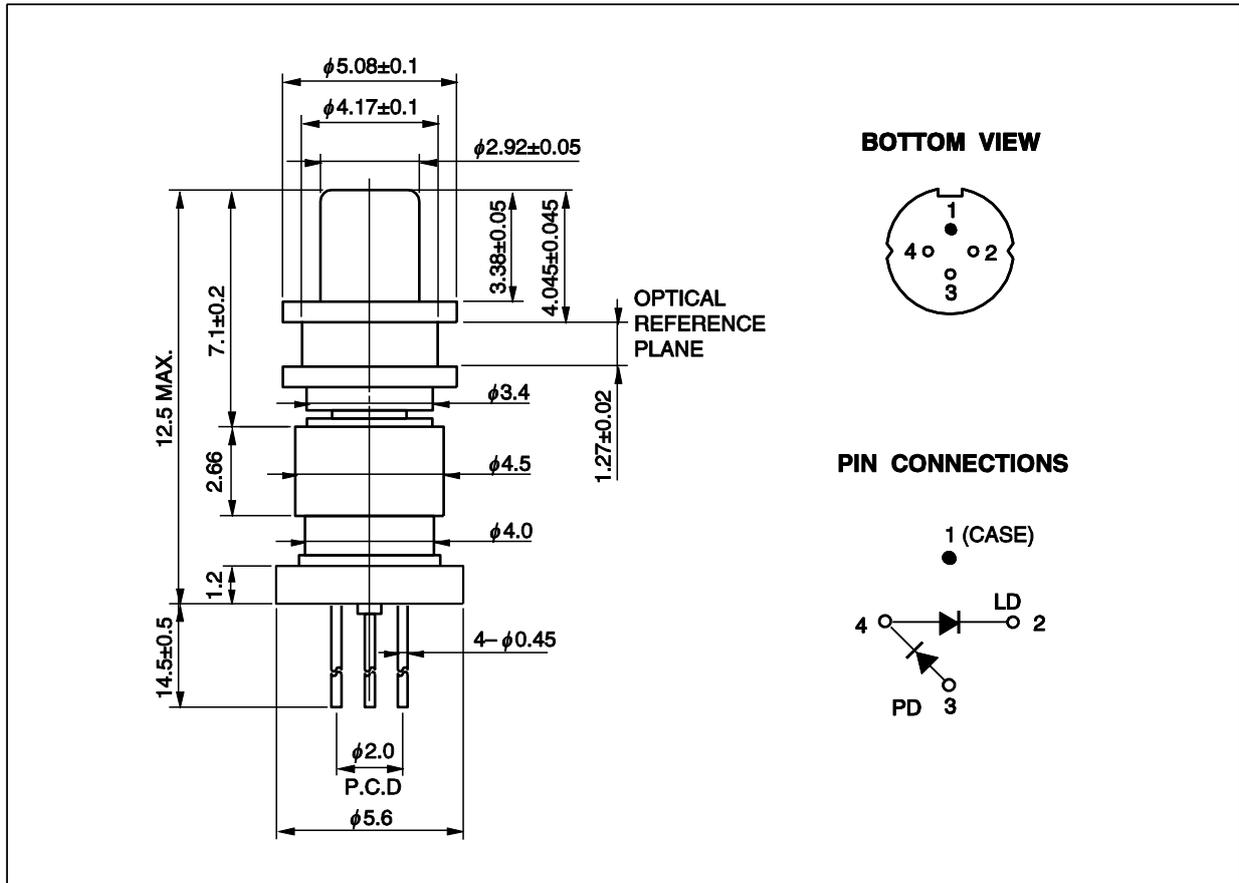
FEATURES

- Internal optical isolator
- Optical output power $P_i = 2.0 \text{ mW}$
- Peak emission wavelength $\lambda_p = 1\,470 \text{ to } 1\,610 \text{ nm}$ (Based on CWDM)
- Low threshold current $I_{th} = 10 \text{ mA TYP. @ } T_c = 25^\circ\text{C}$
- Operating case temperature range $T_c = -20 \text{ to } +85^\circ\text{C}$
- Side mode suppression ratio $\text{SMSR} = 40 \text{ dB}$
- InGaAs monitor PIN-PD

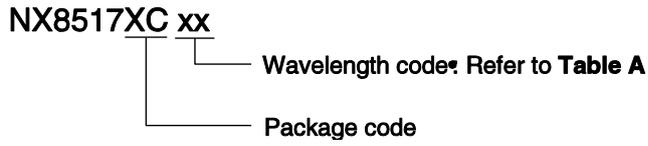


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PACKAGE DIMENSIONS (UNIT: mm)



ORDERING INFORMATION



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 _{slid}	350 (3 sec.)	°C

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

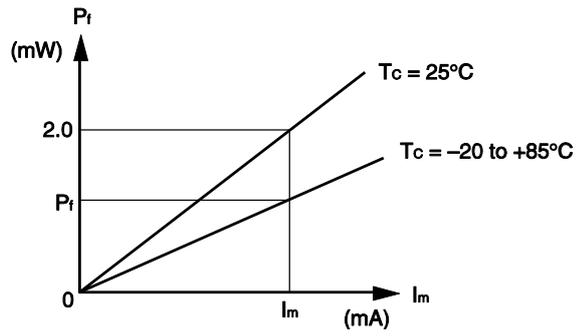
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Optical Output Power from Fiber	P _f	CW, T _c = 25°C, I _F = I _{th} + 20 mA		2.0		mW
Operating Voltage	V _{op}	CW, P _f = 2.0 mW		1.1	1.6	V
Threshold Current	I _{th}	CW, T _c = 25°C		10	20	mA
		CW			50	
Differential Efficiency	η _d	CW, P _f = 2.0 mW, T _c = 25°C	0.07	0.1		W/A
		CW, P _f = 2.0 mW	0.04			
Peak Emission Wavelength	λ _p	CW, P _f = 2.0 mW, RMS (-20 dB), T _c = 35°C	λ _p -2	λ _p *1	λ _p +2	nm
Temperature Dependence of Peak Emission Wavelength	Δλ/ΔT	CW	0.08	0.10	0.12	nm/°C
Side Mode Suppression Ratio	SMSR	CW, P _f = 2.0 mW	30	40		dB
Rise Time	t _r	I _b = I _{th} , 20-80%, P _f = 2.0 mW			100	ps
Fall Time	t _f	I _b = I _{th} , 80-20%, P _f = 2.0 mW			150	ps
Monitor Current	I _m	CW, 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 ²	γ	CW, I _m = const. (@ P _f = 2.0 mW)	-1.0		1.0	dB
Connector Repeatability	-	With master pigtail	-1.0		1.0	dB

*1 Available for CWDM Wavelengths based on ITU-T recommendations
 λ_p = 1 470, 1 490, 1 510, 1 530, 1 550, 1 570, 1 590, 1 610 nm
 Please refer to **Table A**.

Table A: CWDM wavelength code (@ T_c = 35°C)

Wavelength Code	MIN. (nm)	TYP. (nm)	MAX. (nm)
47	1 468	1 470	1 472
49	1 488	1 490	1 492
51	1 508	1 510	1 512
53	1 528	1 530	1 532
55	1 548	1 550	1 552
57	1 568	1 570	1 572
59	1 588	1 590	1 592
61	1 608	1 610	1 612

*2 Tracking Error: γ



$$\gamma = \left| 10 \log \frac{P_r}{2.0} \right| \text{ [dB]}$$

REFERENCE

Document Name	Document No.
Opto-Electronics Devices Pamphlet	PX10160E

SAFETY INFORMATION ON THIS PRODUCT



SEMICONDUCTOR LASER



AVOID EXPOSURE - Invisible Laser Radiation is emitted from this aperture

<p>Warning Laser Beam</p>	<p>A laser beam is emitted from this diode during operation. The laser beam, visible or invisible, directly or indirectly, may cause injury to the eye or loss of eyesight.</p> <ul style="list-style-type: none"> • Do not look directly into the laser beam. • Avoid exposure to the laser beam, any reflected or collimated beam.
<p>Caution GaAs Products</p>	<p>This product uses gallium arsenide (GaAs). GaAs vapor and powder are hazardous to human health if inhaled or ingested, so please observe the following points.</p> <ul style="list-style-type: none"> • Follow related laws and ordinances when disposing of the product. If there are no applicable laws and/or ordinances, dispose of the product as recommended below. <ol style="list-style-type: none"> 1. Commission a disposal company able to (with a license to) collect, transport and dispose of materials that contain arsenic and other such industrial waste materials. 2. Exclude the product from general industrial waste and household garbage, and ensure that the product is controlled (as industrial waste subject to special control) up until final disposal. • Do not burn, destroy, cut, crush, or chemically dissolve the product. • Do not lick the product or in any way allow it to enter the mouth.