

NEC

1480 nm EDFA APPLICATION InGaAsP STRAINED MQW-DC-PBH LASER DIODE MODULE

NX7461LE

FEATURES

- **InGaAsP STRAINED MQW DC-PBH LASER DIODE**
- **HIGH OUTPUT POWER:**
P_f = 150 mW MIN @ I_F = 600 mA CW
- **INTERNAL OPTICAL ISOLATOR, THERMOELECTRIC COOLER AND InGaAs MONITOR PHOTO DIODE**
- **HERMETICALLY SEALED 14-PIN BUTTERFLY PACKAGE**
- **SINGLE MODE FIBER PIGTAIL**
- **WIDE OPERATING TEMPERATURE:**
T_C = -20 to +70°C

DESCRIPTION

The NX7461LE is a 1480 nm pumping laser diode module with optical isolator for an EDFA (Er Doped optical Fiber Amplifier) that can expand the transmission span and compensate optical losses. It has a strained Multiple Quantum Well (st-MQW) DC-PBH laser diode that features high output power, high efficiency, and stable fundamental mode.

ELECTRO-OPTICAL CHARACTERISTICS (T_{LD} = 25°C, T_C = -20 to +70°C, unless otherwise specified)

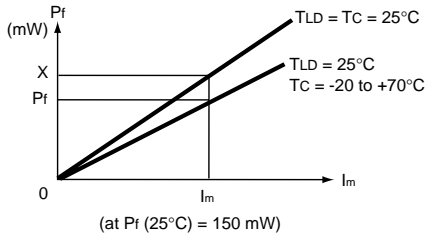
PART NUMBER			NX7461LE		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I _{TH}	Threshold Current, CW	mA		35	50
V _F	Forward Voltage, I _F = 600 mA	V		2.2	2.7
P _f	Optical Output Power from Fiber, I _F = 600 mA, T _{LD} = T _C = 25°C	mW	150		
λ _c	Center Emission Wavelength, I _F = 600 mA, RMS (-20 dB)	nm	1470	1480	1490
σ	Spectrum Width, I _F = 600 mA, RMS (-20 dB)	nm		4.0	8.0
ISOL	Isolation, 1470 nm to 1490 nm	dB	20		

ELECTRO-OPTICAL CHARACTERISTICS (Applicable to Monitor PD: T_{LD} = 25°C, T_c = -20 to +70°C)

PART NUMBER			NX7461LE Series		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I _m	Monitor Current, V _R = 5 V, I _F = 600 mA	μA	100	600	1000
I _D	Monitor Dark Current, V _R = 5 V	nA		2	10
γ ¹	Tracking Error, I _m = const.	dB			0.5

Note:

$$1. \gamma = \left| 10 \log \frac{P_f}{20 \text{ mW}} \right|$$



ELECTRO-OPTICAL CHARACTERISTICS (Applicable to Thermistor and TEC: T_{LD} = 25°C, T_c = -20 to +70°C)

PART NUMBER			NX8562LB Series		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
R	Thermistor Resistance	kΩ	9.5	10.0	10.5
B	B Constant	K	3300	3400	3500
I _c	Cooler Current, ΔT = 45 K	A			1.4
V _c	Cooler Voltage, ΔT = 45 K	V			3.6
ΔT ¹	Cooling Capacity, I _c = 1.4 A, I _F = 600 mA	K	45		

Note:

$$1. \Delta T = |T_c - T_{LD}|$$

ABSOLUTE MAXIMUM RATINGS¹

(T_c = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
I _F	Forward Current of LD	mA	720
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	-20 to +70
T _{STG}	Storage Temperature	°C	-40 to +85
T _{SLD}	Lead Soldering Temperature (10 s)	°C	260

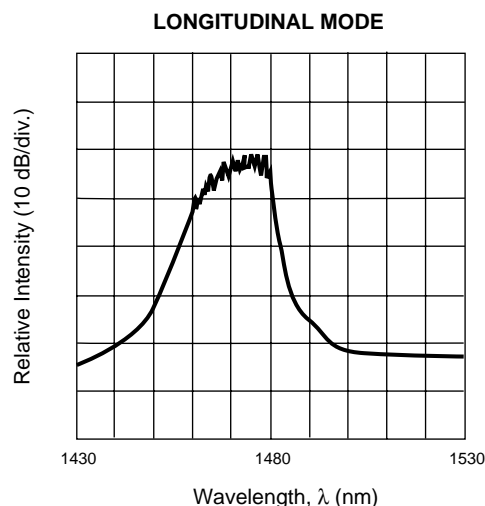
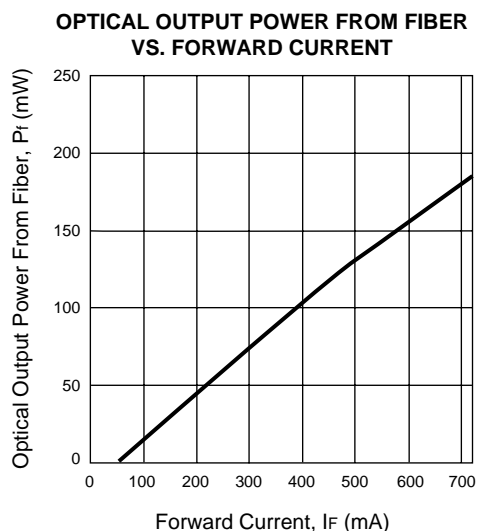
Note:

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

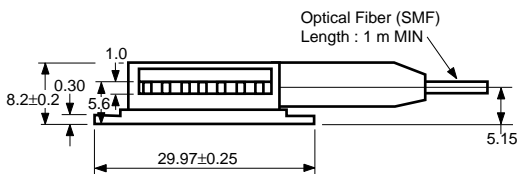
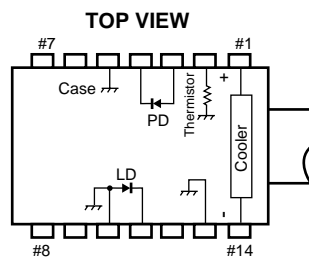
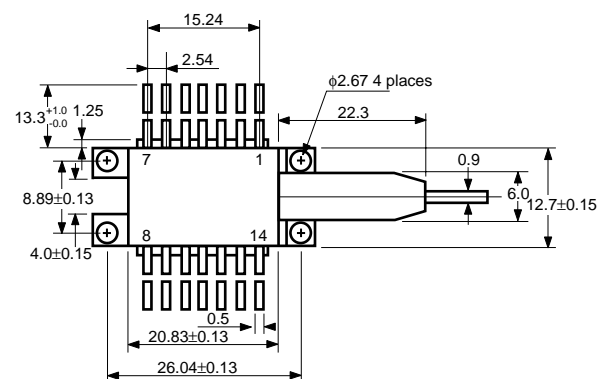
ORDERING INFORMATION

Part Number	Available Connector
NX7461LE	Without Connector
NX7461LE-BA	With FC-PC Connector
NX7461LE-CA	With SC-PC Connector

TYPICAL PERFORMANCE CURVES ($T_c = 25^\circ\text{C}$)



OUTLINE DIMENSIONS (Units in mm)



PIN CONNECTIONS

PIN No.	FUNCTION	PIN No.	FUNCTION
1	COOLER ANODE	8	NC
2	THERMISTOR	9	NC
3	PD ANODE	10	LD ANODE, CASE GROUND
4	PD CATHODE	11	LD CATHODE
5	CASE GROUND	12	NC
6	NC	13	CASE GROUND
7	NC	14	COOLER CATHODE