

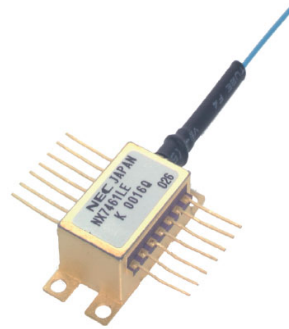


**NEC's 1480 nm InGaAsP MQW FP
PUMP LASER DIODE MODULE
FOR EDFA APPLICATION (150 mW MIN)**

NX7461LE-CC

FEATURES

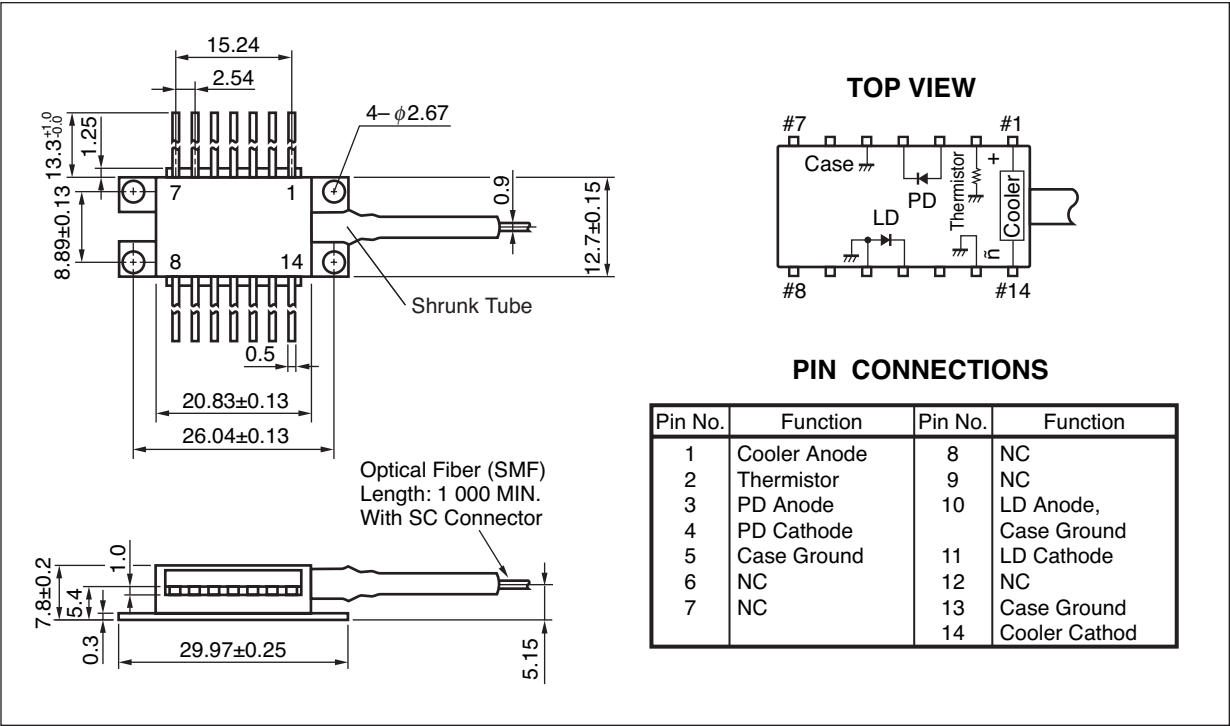
- InGaAsP MQW-FP LASER DIODE
- HIGH OUTPUT POWER:
Pf = 150 mW MIN @ IF = 600 mA CW
- INTERNAL OPTICAL ISOLATOR, THERMOELECTRIC COOLER AND InGaAs MONITOR PHOTO DIODE
- SINGLE MODE FIBER PIGTAIL
- HERMETICALLY SEALED 14-PIN BUTTERFLY PACKAGE



DESCRIPTION

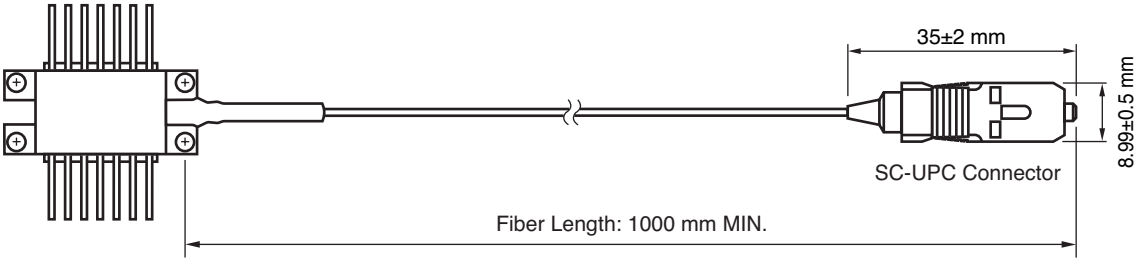
NEC's NX7461LE-CC is a 1480 nm pumping laser diode module with optical isolator for an EDFA (Er Doped optical Fiber Amplifier) that can expand the transmission span and compensate optical losses. This device is a Multiple Quantum Well (MQW) structured Fabry-Perot (FP) laser diode that features high output power, high efficiency, and stable fundamental mode.

PACKAGE DIMENSIONS (Units in mm)



OPTICAL FIBER CHARACTERISTICS

PARAMETER	SPECIFICATION	UNIT
Mode Field Diameter	9.5±1	μm
Cladding Diameter	125±2	μm
Maximum Cladding Noncircularity	2	%
Maximum Core/Cladding Concentricity	1.6	%
Outer Diameter	0.9±0.1	mm
Cut-off Wavelength	1100 to 1270	nm
Minimum Fiber Bending Radius	30	mm
Fiber Length	1000 MIN.	mm
Flammability	UL1581 VW-1	



ORDERING INFORMATION

PART NUMBER	AVAILABLE CONNECTOR
NX7461LE-CC	With SC-UPC Connector

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Forward Current of LD	I_F	720	mA
Reverse Voltage of LD	V_R	2.0	V
Forward Current of PD	I_F	10	mA
Reverse Voltage of PD	V_R	20	V
Operating Case Temperature	T_C	-20 to +70	°C
Storage Temperature	T_{stg}	-40 to +85	°C
Thermistor Current	I_t	0.5	mA
Thermistor Voltage	V_t	12.0	V
Cooler Current	I_c	1.8	A
Cooler Voltage	V_c	6.0	V
Lead Soldering Temperature	T_{sld}	260 (10 sec.)	°C

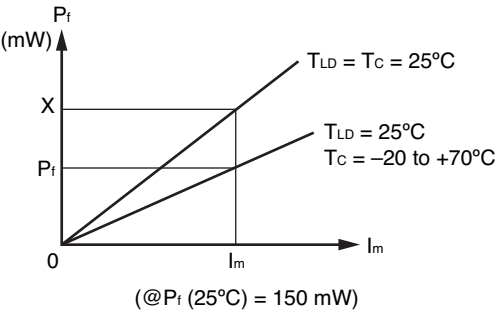
ELECTRO-OPTICAL CHARACTERISTICS (TLD = 25°C, TC = -20 to +70°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Threshold Current	I_{th}	CW		50	60	mA
Forward Voltage	V_F	$I_F = 600$ mA		2.4	2.7	V
Optical Output Power from Fiber	P_t	$I_F = 600$ mA	150			mW
Center Emission Wavelength	λ_c	$I_F = 600$ mA, RMS (-20 dB)	1 460	1 480	1 490	nm
Spectrum Width	σ	$I_F = 600$ mA, RMS (-20 dB)		4.0	8.0	nm
Isolation	I_s	1 460 nm to 1 490 nm	25			dB

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

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Monitor Current	I _m	V _R = 5 V, I _F = 600 mA	500	1300	2000	μA
Dark Current	I _D	V _R = 5 V		2	10	nA
Tracking Error	γ ^{*1}	I _m = const.			0.5	dB

*1 $\gamma = \left| 10 \log \frac{P_f}{150 \text{ mW}} \right|$



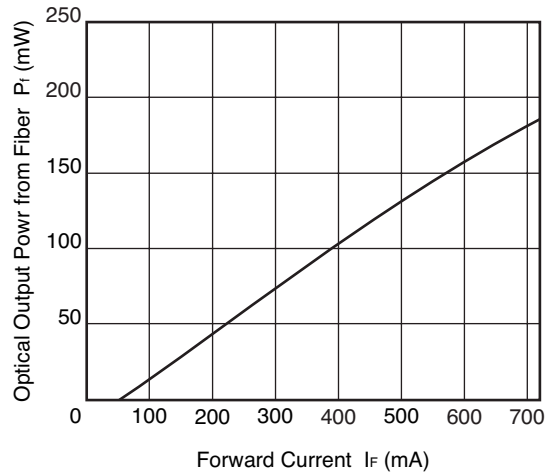
ELECTRO-OPTICAL CHARACTERISTICS (Applicable to Thermistor and TEC: T_{LD} = 25°C, T_C = -20 to +70°C)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Thermistor Resistance	R	T _{LD} = 25°C	9.5	10.0	10.5	kΩ
B Constant	B		3350	3450	3550	K
Cooler Current	I _C	ΔT = 45°C, I _F = 720 mA		1.2	1.4	A
Cooler Voltage	V _C	ΔT = 45°C, I _F = 720 mA		3.0	3.6	V
Cooling Capacity	ΔT ^{*1}	I _C = 1.4 A, I _F = 720 mA	45			°C

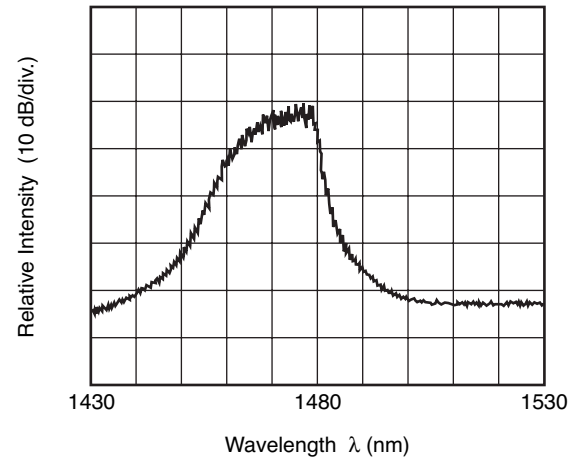
*1 $\Delta T = \left| T_C - T_{LD} \right|$

TYPICAL CHARACTERISTICS (T_c = 25°C, unless otherwise specified)

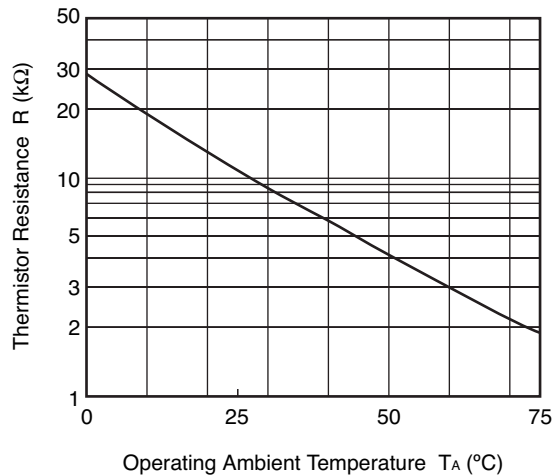
OPTICAL OUTPUT POWER FROM FIBER vs.
FORWARD CURRENT



SPECTRUM



THERMISTOR RESISTANCE vs.
OPERATING AMBIENT TEMPERATURE



Life Support Applications

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