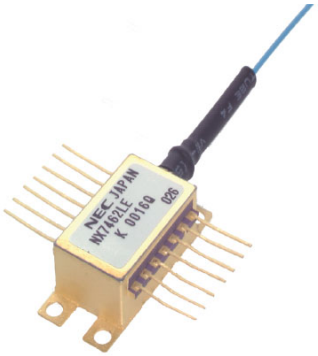
CEL

NEC's 1480 nm InGaAsP MQW FP PUMP LASER DIODE MODULE FOR EDFA APPLICATION (120 mW MIN)

NX7462LE-CC

FEATURES

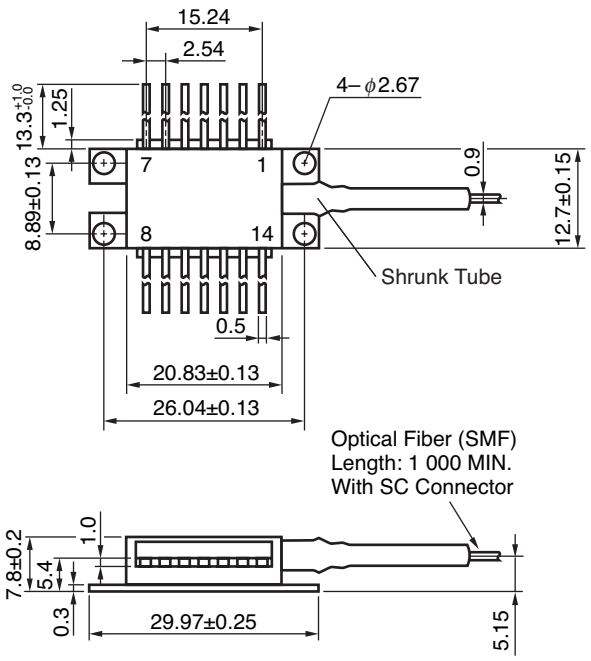
- **InGaAsP MQW-FP LASER DIODE**
- **HIGH OUTPUT POWER:**
  Pf = 120 mW MIN @ IF = 550 mA CW
- **INTERNAL OPTICAL ISOLATOR, THERMOELECTRIC COOLER AND InGaAs MONITOR PHOTO DIODE**
- **SINGLE MODE FIBER PIGTAIL**
- **HERMETICALLY SEALED 14-PIN BUTTERFLY PACKAGE**

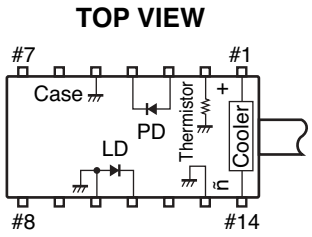


DESCRIPTION

NEC's NX7462LE -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-Perpt (FP) Laser Diode that features high output power, high efficiency and stable fundamental mode.

PACKAGE DIMENSIONS (Units in mm)



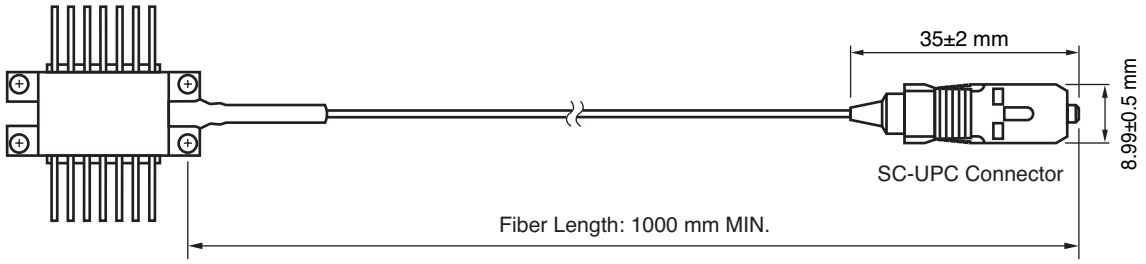


PIN CONNECTIONS

Pin No.	Function	Pin No.	Function
1	Cooler Anode	8	NC
2	Thermistor	9	NC
3	PD Anode	10	LD Anode,
4	PD Cathode		Case Ground
5	Case Ground	11	LD Cathode
6	NC	12	NC
7	NC	13	Case Ground
		14	Cooler Cathod

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
NX7462LE-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

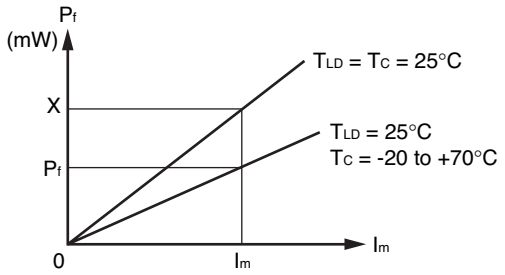
ELECTRO-OPTICAL CHARACTERISTICS (T_{LD} = 25°C, T_C = -20 to +70°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Threshold Current	I_{th}	CW		50	60	mA
Forward Voltage	V_F	I_F = 550 mA		2.2	2.7	V
Optical Output Power from Fiber	P_f	I_F = 550 mA	120			mW
Center Wavelength	λ_C	I_F = 550 mA, RMS (–20 dB)	1 460	1 480	1 490	nm
Spectrum Width	σ	I_F = 550 mA, RMS (–20 dB)		4.0	8.0	nm
Isolation	I_S	1 460 nm to 1 490 nm	25	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 = 550 mA	500	1200	2000	μA
Monitor Dark Current	I_D	V_R = 5 V		2	10	nA
Tracking Error	γ*1	I_m = const.			0.5	dB

*1 $\gamma = \left| 10 \log \frac{P_f}{120 \text{ mW}} \right|$



(@P_f (25°C) = 120 mW)

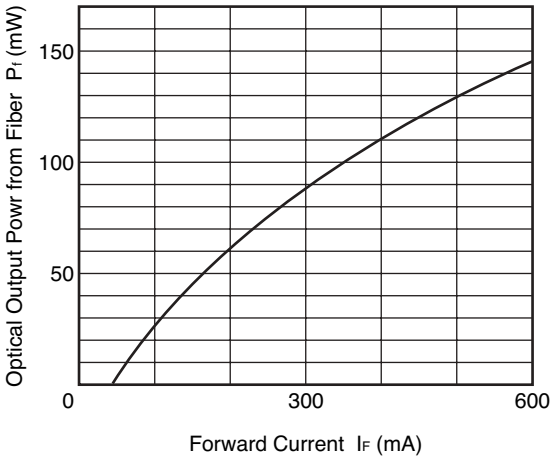
ELECTRO-OPTICAL CHARACTERISTICS (Applicable to Thermistor and TEC: T_{LD} = 25°C, T_C = –20 to +70°C)

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 = 660 mA		1.1	1.4	A
Cooler Voltage	V_C	ΔT = 45°C, I_F = 660 mA		2.8	3.6	V
Cooling Capacity	ΔT*1	I_C = 1.4 A, I_F = 660 mA	40			°C

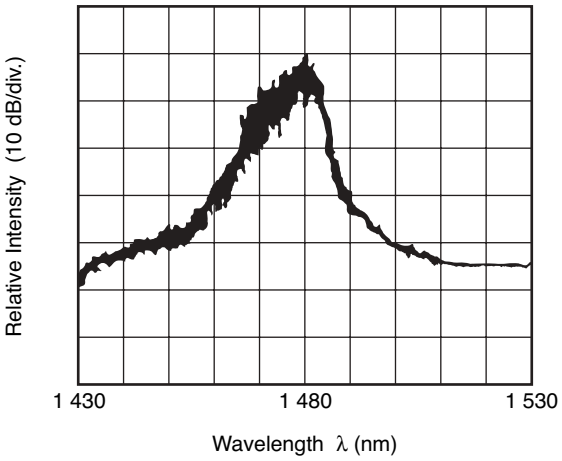
*1 $\Delta T = \left| T_C - T_{LD} \right|$

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

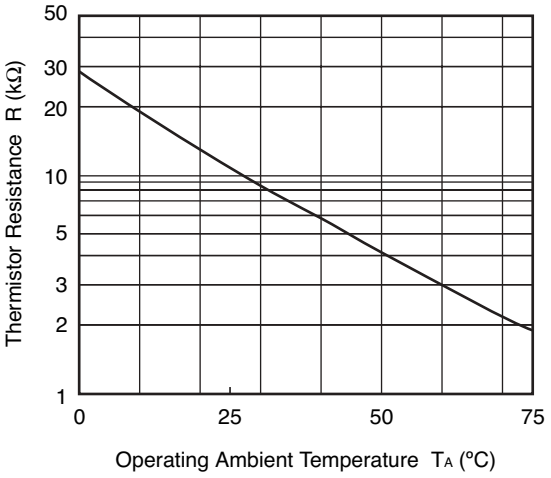
OPTICAL OUTPUT POWER FROM FIBER vs. FORWARD CURRENT



LONGITUDINAL MODE



THERMISTOR RESISTANCE vs. OPERATING AMBIENT TEMPERATURE



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.