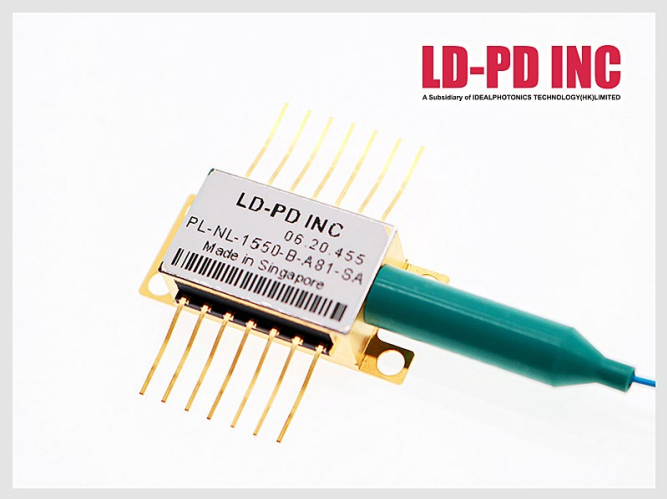
1550nm Ultra High power Narrow Linewidth Laser Diodes



Description:

The PL-NL series directly modulated external cavity laser is cost effective solution for 2.5 Gbits/s digital transmission in SMF-28 fiber. This is fabricated in a hermetically sealed 14-pin butterfly package that contains thermoelectric cooler (TEC), thermistor, monitor photodiode, optical isolator.

The PL-NL provides substantially lower dispersion penalty and lower chirp than a directly modulated DFB. The wavelength stability is assured by design, eliminating the need for wavelength lockers and complex feedback control circuits.

Features:

- Ultra high power to 100mw
- 100 GHz channel spacing
- Typical Linewidth:0.5MHz
- Low dispersion provides
- Low transient chirp provides unique narrow dynamic spectrum
- Excellent long-term wavelength stability eliminates the need for a wavelength locker

Application:

- Metro and Long Haul DWDM,100 GHz spaced networks
- SONET/SDH OC-48/STM16 ring and meshed applications
- Drop-side of DWDM long-haul transport equipment
- Optical Test and Instrumentation
- Microwave Photonics
- CATV networks
- Sensors

E/O Characteristics:

Optical Characteristics (at 25 °C laser temperature)

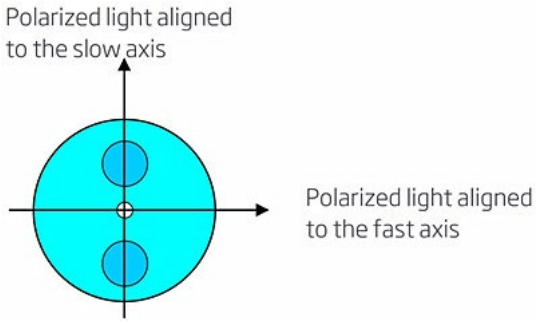
Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λc	TL=15～35°C CW	1549.62	1550.12	1550.62	nm
Peak Optical Output Power	PO	-		100	-	mW
Spectral linewidth	LW	-	-	0.5	1	MHz
Side-mode Suppression Ratio	SMSR	CW	30	40	-	dB
Optical Isolation	-	-10 < TC < +70 °C	30	-	-	dB
Polarization Extinction Ratio	ER	-	20	-	-	dB
Relative Intensity Noise	RIN	CW, output power 5mW	-	-	-135	dB
Wavelength drift with case (-10 to 70 °C) temperature	△λ	TL=15～35°C	-	-	±30	pm
Wavelength Temperature coefficient	Δλ/ΔT	TL=15～35°C	-	15	30	pm/°C
Wavelength Current coefficient	Δλ/ΔI	-	-	1.5	2	pm/mA

Electrical Characteristics (at 25 °C laser temperature)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current	ITH	-	-	40	50	mA
Slope Efficiency	η	CW output power 100 mW	0.064	0.1	-	mW/mA
Operating current	Iop	CW	-	500	700	mA
TEC set temperature	Ts	-	15	-	35	°C
Laser Forward Voltage	VF	CW output power 100 mW	-	1.3	1.8	V
Monitor Dark Current	ID	-	-	-	0.1	μA
Input Impedance	ZIN	-	22	25	28	Ω
Thermistor Current	ITC	-	10	-	100	μA
Thermistor Resistance	RTH	TL = 25°C	9.5	10	10.5	KΩ
TEC Current	ITEC	TL = 25°C, TC = 70°C	-	-	1.8	A
TEC Voltage	VTEC	TL = 25°C, TC = 70°C	-	-	3.5	V
TEC capacity	ΔT	Tc = 70°C	-	-	50	°C
Thermistor temperature	-	-	-	-	100	°C

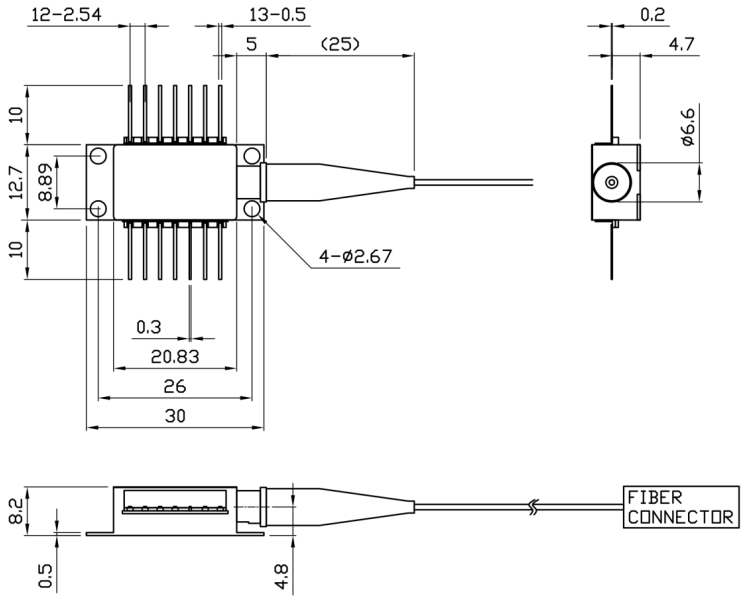
Fiber Pigtail Specifications:

Parameters	Description
Fiber Type	PM fiber
Jacket Type	900μm loose tube
Pigtail Length	1.0±0.1m
Connector Type	FC/APC
PM fiber Connector Orientation	Please see the right figure

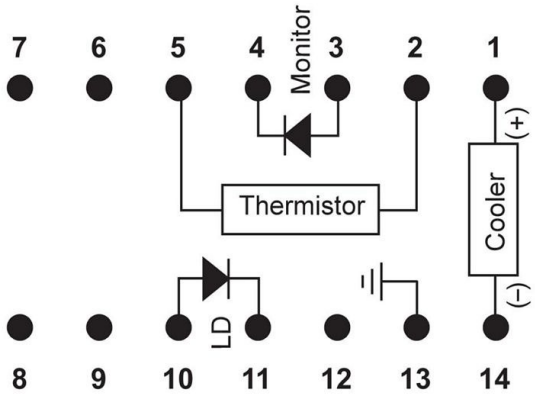


Note: The PM fiber and the connector key are aligned to the slow axis,fast axis is blocked.

Package Size:



Pin definition:



1	Thermoelectric Cooler (+)	8	N/C
2	Thermistor	9	N/C
3	PD Monitor Anode (-)	10	Laser Anode (+)
4	PD Monitor Cathode (+)	11	Laser Cathode (-)
5	Thermistor	12	N/C
6	N/C	13	Case Ground
7	N/C	14	Thermoelectric Cooler (-)

Absolute Maximum Ratings:

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Storage temperature	Ts	-	-40	-	85	°C
Operating case temperature	Top	-	-15	-	75	°C
Forward Current	IF	CW	-	-	900	mA
Reverse Voltage	VR	-	-	-	2	V
Photodiode Forward Current	IFPD	-	-	-	2	mA
Photodiode Reverse Voltage	VRPD	-	-	-	10	V
TEC current	ITEC	-	-	0.8	1.4	A
TEC voltage	VTEC	-	-	1.5	3.5	V

OEM Info:

PL-HP-NL-□□□□-☆-A8▽-XX

□□□□:Wavelength

1550:1550nm

1555:1555nm

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1560:1560nm

☆ :Output Power

A:70mW

B:100mW

▽:Linewidth

1:＜1MHZ

2:＜0.5MHZ

XX: Fiber and Connector Type

SA=SMF-28E+ FC/APC

SP=SMF-28E+ FC/PC

PP=PM Fiber+ FC/PC

PA=PM Fiber+ FC/APC