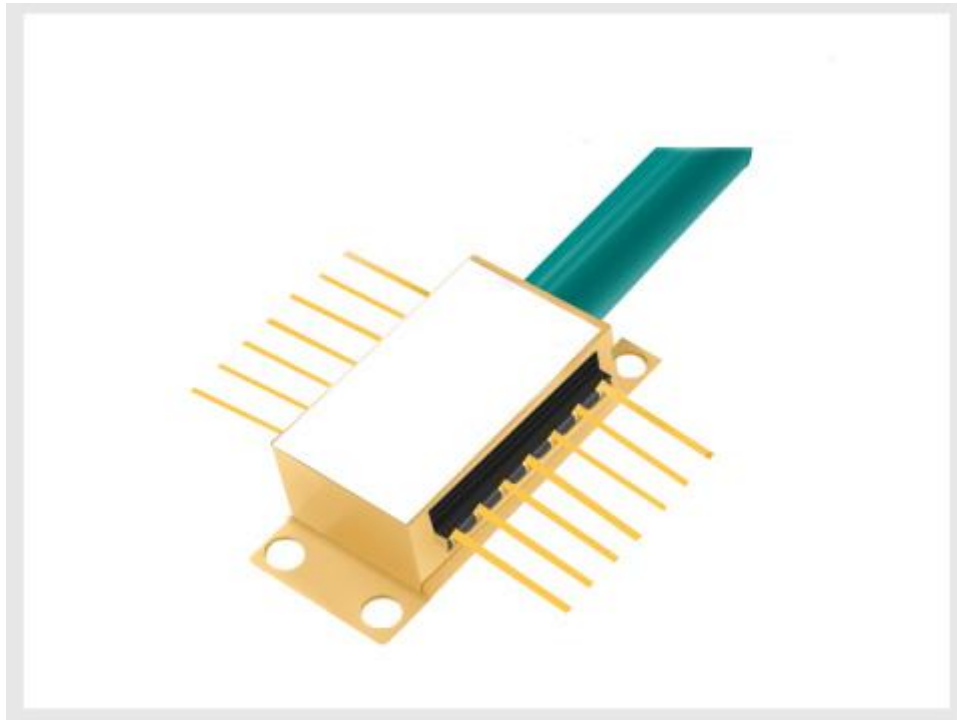


1550nm PM Ultra High power Narrow Linewidth Laser Diodes



● Product Description

The 1550 nm ultra-narrow linewidth single-frequency laser is a high-performance semiconductor laser that integrates silicon photonic chip technology, precise optical path design, and advanced packaging processes.

● Product features

Optical output 100mW; Narrow linewidth < 1MHz; with TEC; Optical Isolation 30dB; Pigtail Length $1.0 \pm 0.1\text{m}$; PM Fiber; FC/APC

● Part Number

MP-HP-NL-1550-B-A81-PA

● Application area

LiDAR | Coherent detection | Fiber optics sensing | Biomedical photonics |
 Scientific research equipment | 3D mapping

● Core parameters

Wavelength	Output Power	Linewidth
1550nm	100mW	500kHz

● General Parameters

Optical and electrical parameters (TLD=25°C)

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Center Wavelength	λ_c	TL=15~ 35°C CW	1549.6 2	1550.1 2	1550.6 2	nm
Peak Optical Output	PO	-		100	-	mW

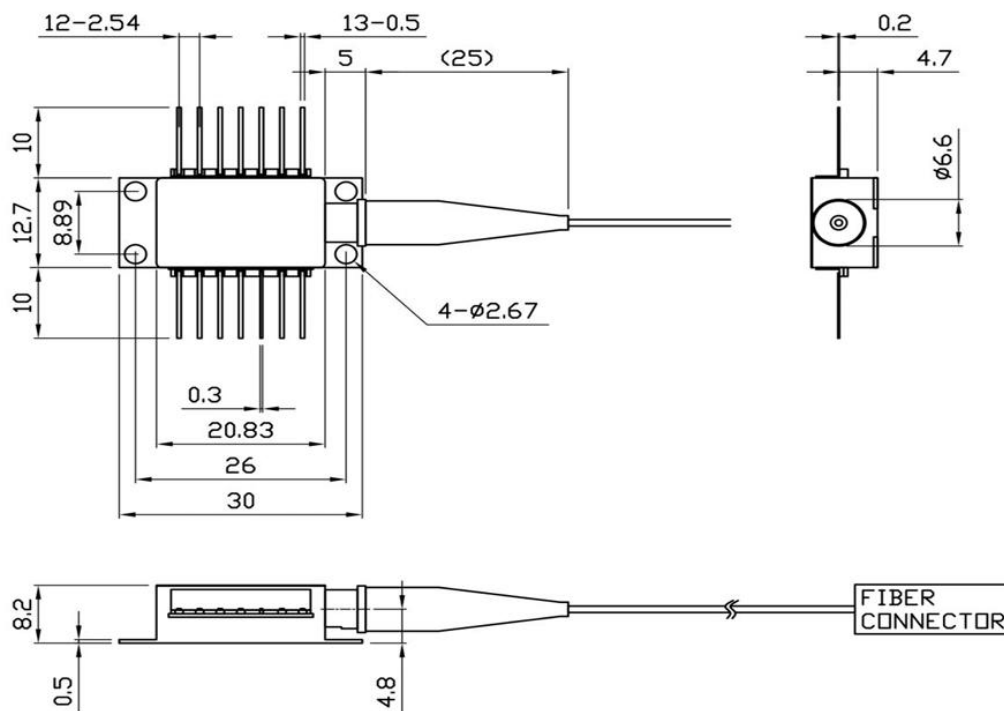
Power						
Spectral linewidth	LW	-	-	0.5	1	MHz
Side-mode Suppression Ratio	SMSR	CW	30	40	-	dB
Optical Isolation	-	-10 < TC < +70 °C	30	-	-	dB
Polarization Extinction Ratio	ER	-	20	-	-	dB
Relative Intensity Noise	RIN	CW, output power 5mW	-	-	-135	dB
Wavelength drift with case (-10 to 70 °C) temperature	$\Delta\lambda$	TL=15~ 35°C	-	-	±30	pm

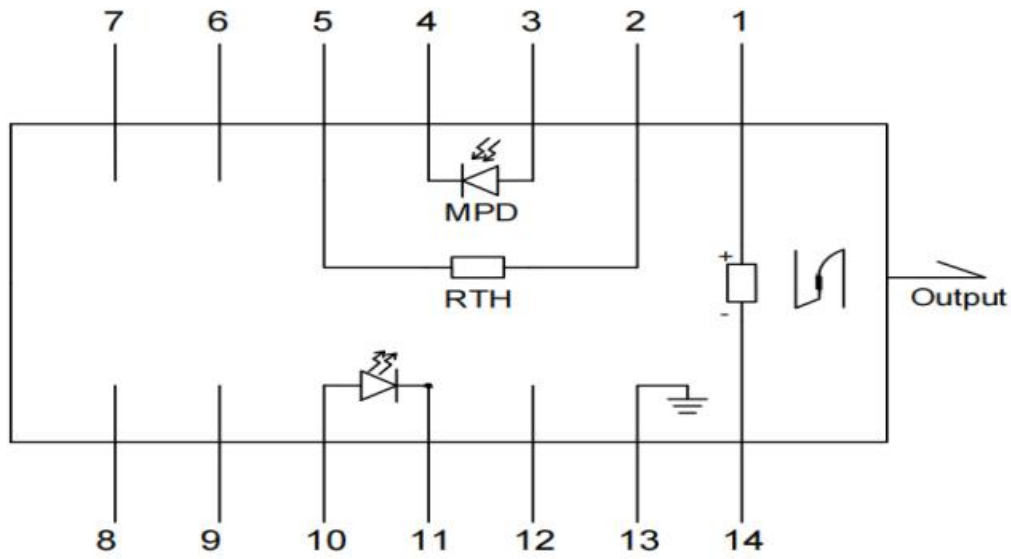
Electrical Characteristics (at 25 °C laser temperature)

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	μ A
Input Impedance	ZIN	-	22	25	28	Ω
Thermistor Current	ITC	-	10	-	100	μ A
Thermistor Resistance	RTH	TL = 25 °C	9.5	10	10.5	K Ω

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

Dimensions and Pin definitions





Pin	Function	Pin	Function
1	TEC +	8	NC
2	Thermistors	9	NC
3	PD -	10	LD+
4	PD +	11	LD-
5	Thermistors	12	NC
6	NC	13	Case
7	NC	14	TEC -

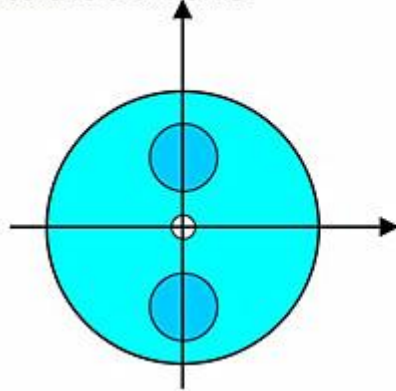
Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit
Storage temperature	Ts	-40	-	85	°C
Operating case temperature	Top	-15	-	75	°C
Forward Current	If	-	-	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

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

Polarized light aligned
to the slow axis



Polarized light aligned
to the fast axis

Optional Configurations