

## 1550nm MQW-FP Laser Diode with pigtail for 1.25G and 2.5G Application

HEFLP-5XXXXXXX

**Features:**

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-FP Laser Diode
- ◆ Low threshold, high slope efficiency and high output power LD
- ◆ Operating Case Temperature: -40°C to +85°C
- ◆ Single-mode fiber pigtailed with SC, FC, ST or LC connector
- ◆ Optional with Isolator

**Applications:**

- ◆ High Speed Optical Transmission System
- ◆ Test Equipments

**General:**

HEFLP-XXXXXXX Series are 1550nm InGaAsP/InP MQW-FP laser diode modules designed for fiber optic communication systems. These modules have low threshold current and high performance at high temperature.

A laser diode is mounted into a coaxial package integrated with an InGaAs monitor PD and a single-mode pigtail.

**Ordering Information: (Standard version <sup>\*Note1</sup>)**

Part No.	$\lambda$ (nm)	Package series	Pin Type	Isolator	Connector	Data Rate
HEFLP-5110AFA2G	1550	A	LD-Pin-2	Single Stage	FC/APC	1.25G
HEFLP-5205BSA2	1550	B	LD-Pin-2	N=None	SC/APC	2.5G
HEFLP-5105CT2	1550	C	LD-Pin-2	N=None	ST/PC	1.25G
HEFLP-5205DFA1G	1550	D	LD-Pin-1	N=None	FC/APC	2.5G
HEFLP-5110ESA2	1550	E	LD-Pin-2	N=None	SC/APC	1.25G

\*Note1: For more ordering information, please refer the nomenclature and contact HighEasy sales.

**Absolute Maximum Ratings:** <sup>\*Note2</sup>

Parameter	Symbol	Ratings	Unit
Storage Temperature	Tstg	-40~+100	°C
Operating Case Temperature	Top	-40~+85	°C
Forward Current (LD)	IfL	150	mA
Reverse Voltage (LD)	VrL	2	V
Reverse Voltage (PD)	VrP	15	V
Reverse Current (PD)	IrP	2	mA
Soldering Temperature (<10s)	Stemp	260	°C

\*Note2: Exceeding any one of these values may destroy the device immediately.

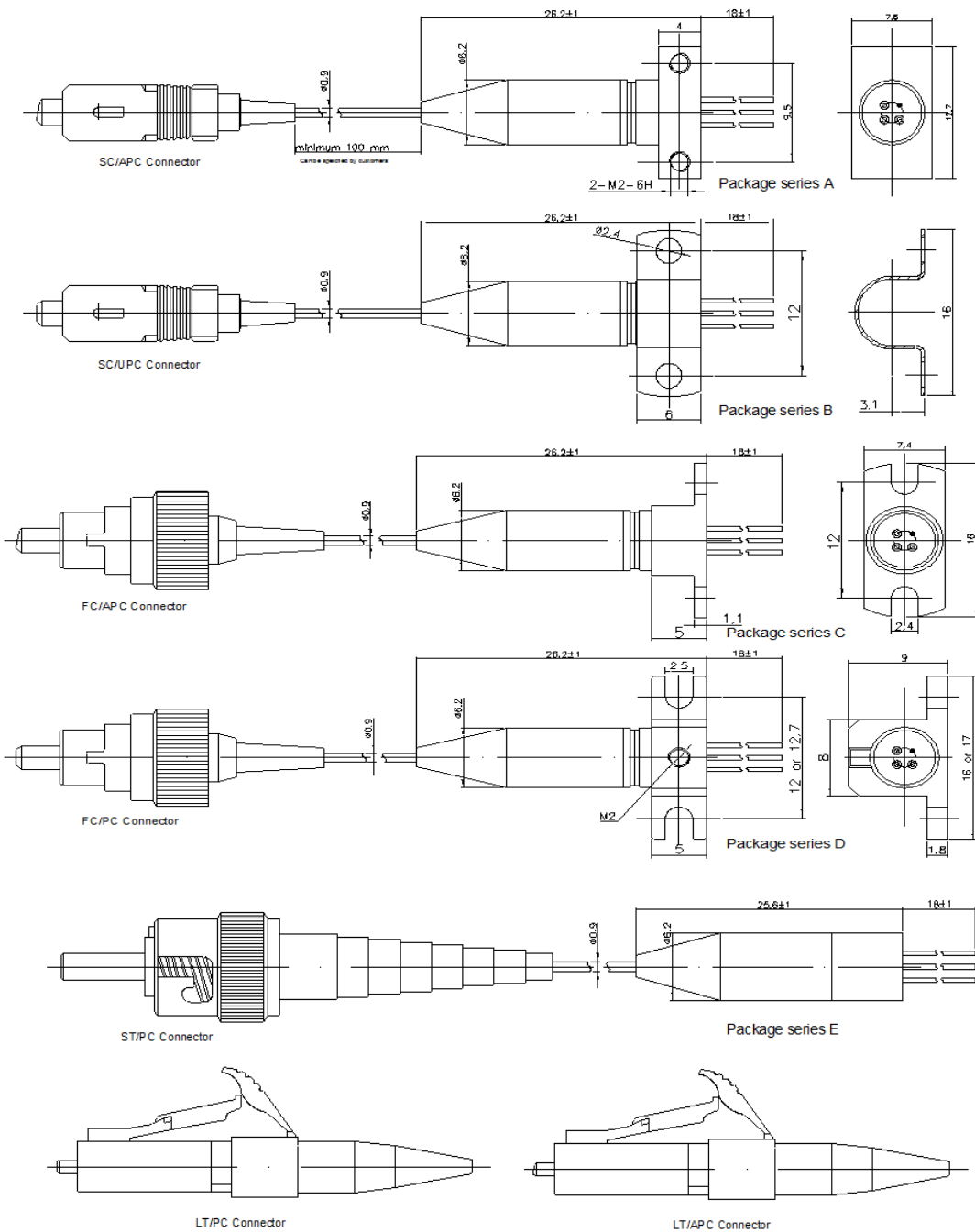
**Electrical and Optical Characteristics:**

(Po=0.3mW, SMF, Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	Ith	CW	—	8	15	mA
Fiber Coupling Power	Pf	CW, If=Ith+20mA <sup>*Note3</sup>	0.2	0.5	1.5	mW
Operating Voltage	Vf	CW, Tc=-40~+85°C	—	1.2	1.6	V
Slope Efficiency <sup>*Note3</sup>	Se	CW, Average(Ith to Ith+20mA)	—	—	0.9	mW/mA
Peak Wavelength	λp	CW	1520	1550	1580	nm
		CW, Tc=-40~+85°C	1490		1585	
Spectral Width	Δλ	CW, 20dB down,	—	1.5	3	nm
Rise Time	tr	Ib=Ith, 20-80%, Tc=-40~+85°C	—		0.05	ns
Fall Time	tf	Ib=Ith, 80-20%, Tc=-40~+85°C	—	0.15	0.05	ns
Tracking Error	ΔPf	I <sub>m</sub> hold(@Pf=0.16mW(25°C)) CW, Tc=-40~+85°C	-1.5	—	1.5	dB
Monitor Current	I <sub>m</sub>	CW, VrP=5V, Tc=-40~+85°C	200		1000	uA
Monitor Dark Current	I <sub>d</sub>	VrP=5V	—	—	10	nA
Monitor Capacitance	C	VrP=5V, f=1MHz	—	—	20	pF
Connector Repeatability	—		-1	—	1	dB
Optical Isolation	—	Single Stage	30	—	—	dB
	—	Dual Stage	40	—	—	

\*Note3: Please confirm Pin direction with us before purchase LD power above 1mW.

**Pigtail Package Dimension:** \*Note4、5、6



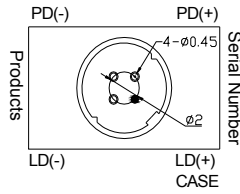
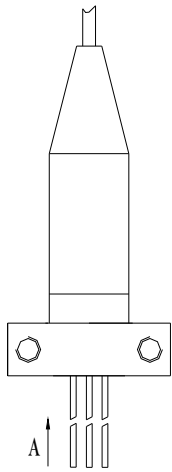
\*Note4: PIN direction and laser mark can be customized. Pigtail is standard SM fiber; the length also can be customized.

\*Note5: For the package series D, the clamping rings dimensions (A) and drill size (B) are can be selected. The following types can be available. Please designate the detailed type while ordering the package series D.

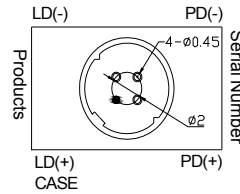
Fixed card type	A(mm)	B(mm)
D	16	12
D-S	17	12.7

\*Note6: For the package series B, the fix card is fixed by customer self. For the detailed information of fix card of A, C, D package series, please refers the following graphs.

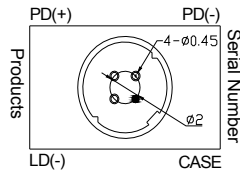
The Direction of Fix Card:



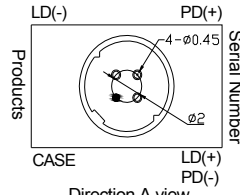
Direction A view  
PLD1A-1(DEFAULT)



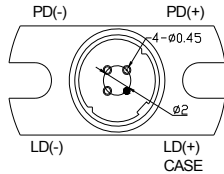
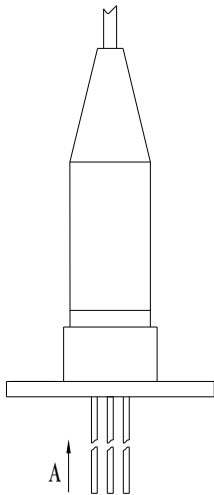
Direction A view  
PLD1A-2



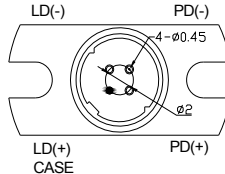
Direction A view  
PLD2A-1(DEFAULT)



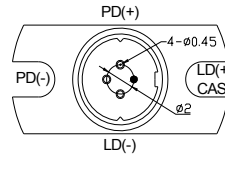
Direction A view  
PLD2A-2



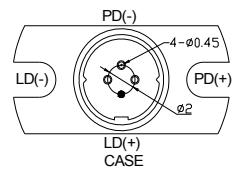
Direction A view  
PLD1C-1(DEFAULT)



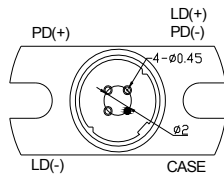
Direction A view  
PLD1C-2



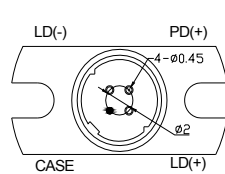
Direction A view  
PLD1C-3



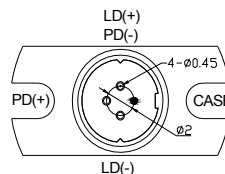
Direction A view  
PLD1C-4



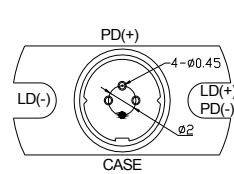
Direction A view  
PLD2C-1(DEFAULT)



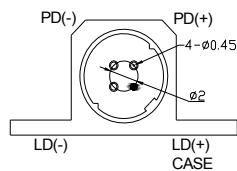
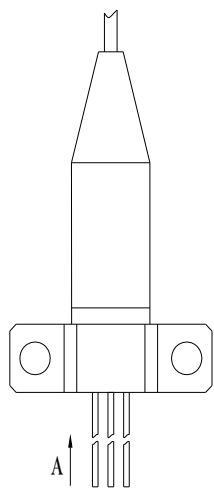
Direction A view  
PLD2C-2



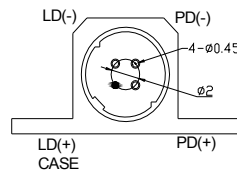
Direction A view  
PLD2C-3



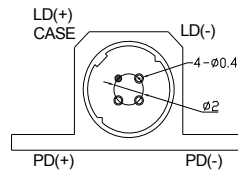
Direction A view  
PLD2C-4



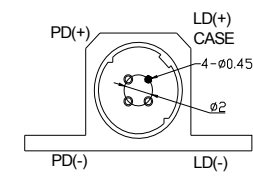
Direction A view  
PLD1D-1(DEFAULT)



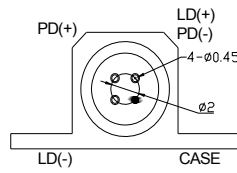
Direction A view  
PLD1D-2



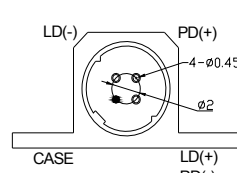
Direction A view  
PLD1D-3



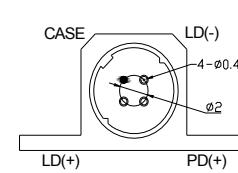
Direction A view  
PLD1D-4



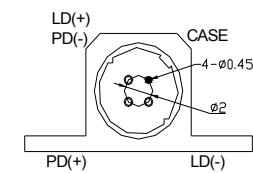
Direction A view  
PLD2D-1(DEFAULT)



Direction A view  
PLD2D-2

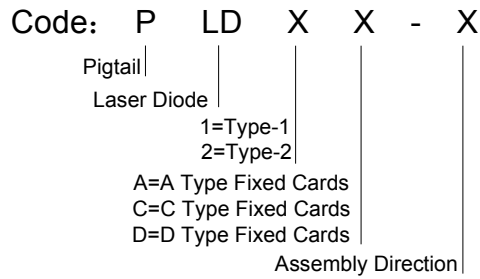


Direction A view  
PLD2D-3



Direction A view  
PLD2D-4

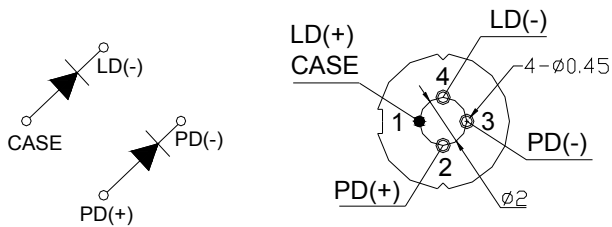
**Nomenclature of Assembly Direction:** \*Note7



\*Note7: Please designate the code of assembly direction.

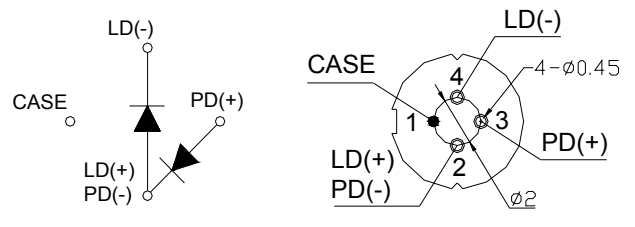
**Pin Assignment:**

TYPE: 1



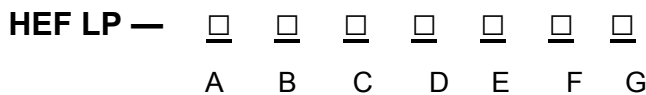
LD-pin-1 / TYPE: C

TYPE: 2



LD-pin-2 / TYPE: B

**Nomenclature:**



NO	Parameter	Detailed Description				
A	Wavelength	5=1550				
B	Data Rate	1=1.25G		2=2.5G		
C	Power	05=0.2-0.6mW		10=0.61-1.5mW		
D	Package Series	A	B	C	D	E
E	Connector	F=FC/PC		S=SC/PC	T=ST/PC	L=LC/PC
		FA=FC/APC		SA=SC/APC		Blank=None
F	Pin Type	1=LD-pin-1			2=LD-pin-2	
G	Isolator	Blank=None		G= Single Stage	G2=Dual Stage	
H	Fiber Type	Blank=SM			M=MM	

**Precaution:**

(1) The modules should be handled in the same manner as ordinary semiconductor devices to prevent the electro-static damages. For safe keeping and carrying, the modules should be packaged with ESD proof material. To assemble the modules on PCB, the workbench, the soldering iron and the human body should be grounded.

(2) Please pay special attention to the atmosphere condition because the dew on the module may cause some electrical damages.

(3) Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.

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