

1310nm MQW-FP Laser Diode with pigtail (2-3mW)

HEFAP-3XXXXXXX

**Features:**

- ◆ High stability MQW-DFB laser chip
- ◆ Built-in InGaAs monitor photodiode
- ◆ Data Rate up to 3Gbit/s
- ◆ Operate Temperature from -40°C to +85°C
- ◆ LC SC FC Pigtail Connector
- ◆ Built-in Isolator
- ◆ Follow RoHS

Applications:

- ◆ CATV return path
- ◆ LTE transmission system (2.7GHz)
- ◆ Other analog transmission system

General:

HEFAP-3XXXXXXX is a DFB Pigtail TOSA modules have been designed specifically for CATV return path and LTE transmission system over a single fiber. The devices are particularly suited for CATV and LTE application.

Absolute Maximum Ratings: *Note1

Parameter	Symbol	Ratings	Unit
Storage Temperature	Tstg	-40~+85	°C
Operating Case Temperature	Top	-40~+85	°C
Forward Current (LD)	IfL	120	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

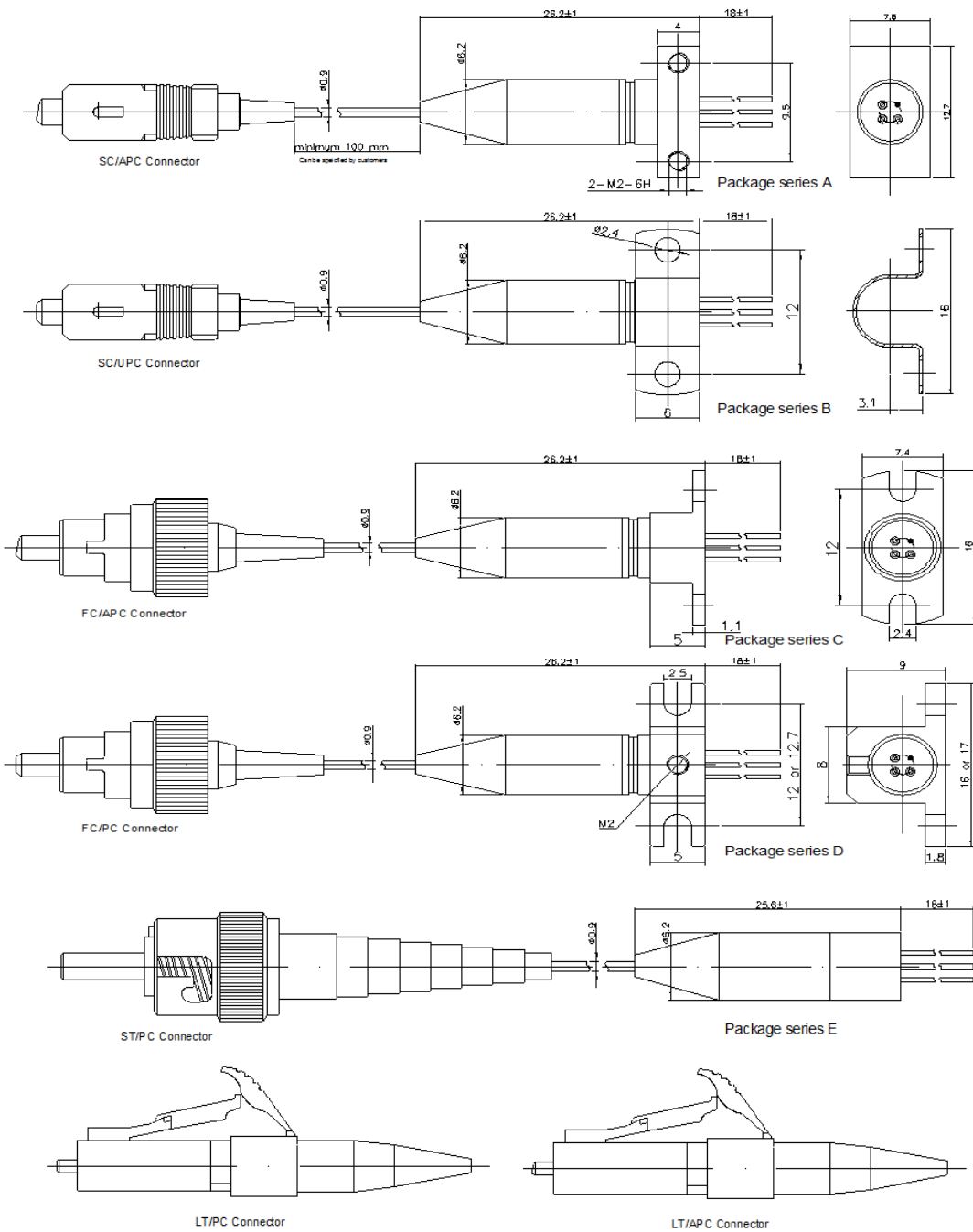
*Note1: Exceeding any one of these values may destroy the device immediately.

Electrical and Optical Characteristics:

(Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	I _{th}	CW	—	12	18	mA
Output Power (After coupled)	P _o	CW, I _f =I _{th} +20mA	2	2.5	3	mW
Operating Current	I _f	CW	—	30	80	mA
Operating Voltage	V _f	CW, T _c =-40~+85	—	1.1	1.6	V
Wavelength	λ _c	CW	1300	1310	1320	nm
Side-mode Suppression Ratio	SMSR	CW, I _{op} =30mA	35			dB
Spectral Width(-20dB)	Δλ	CW, I _{op} =30mA	—	—	1	nm
Tracking Error	ΔP _f	APC, -40~85°C	-1	—	1	dB
Monitor Current	I _m	CW, V _{rP} =5V, T _c =-40~+85	100	—	1000	uA
Monitor Dark Current	I _d	CW, V _{rP} =5V	—	—	0.1	uA
PD Capacitance	C _t	VRD=5V, f=1 MHz	—	—	10	PF
Second-Order Inter-Modulation	IMD2	f1=13MHZ, f2=19MHZ, OMI=10%, P=2mW	—	—	55	dBc
Third-Order Inter-Modulation	IMD3	f1=13MHZ, f2=19MHZ, OMI=10%, P=2mW	—	—	60	dBc
Carrier to Noise Ratio	CNR	—	51	—	—	dB
Relative Intensity Noise	RIN	f=5~300 MHz	—	—	-145	dB/Hz
Bandpass Flatness	BF	Peak to Valley, 5~300 MHz	—	—	1	dB
3dB bandwidth	BW	RL=50Ω, I _{op} =30mA	3	—	—	GHz
Optical Isolation	—	Single Stage	35	—	—	dB

Pigtail Package Dimension: *Note2、3、4



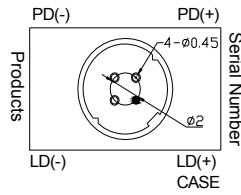
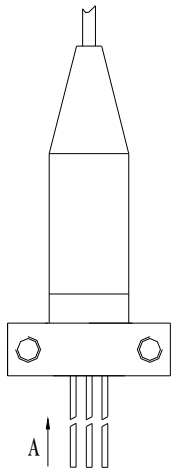
*Note2: PIN direction and laser mark can be customized. Pigtail is standard SM fiber; the length also can be customized.

*Note3: 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.

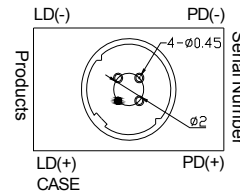
Fixed card type	A(mm)	B(mm)
D	16	12
D-S	17	12.7

*Note4: 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.

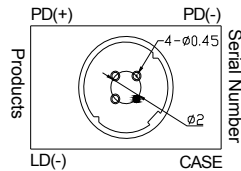
The Direction of Fix Card:



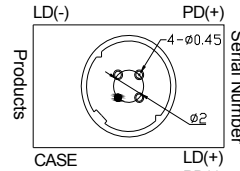
Direction A view
PLD1A-1(DEFAULT)



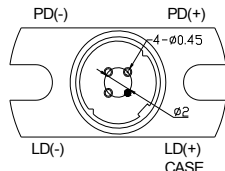
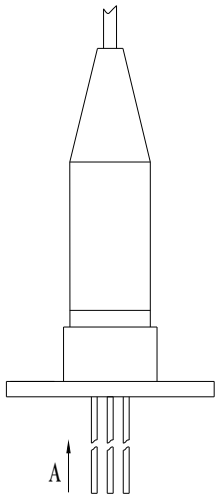
Direction A view
PLD1A-2



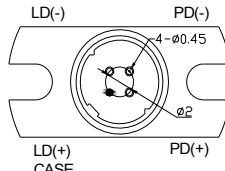
Direction A view
PLD2A-1(DEFAULT)



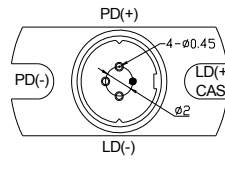
Direction A view
PLD2A-2



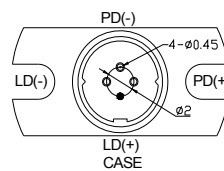
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PLD1C-1(DEFAULT)



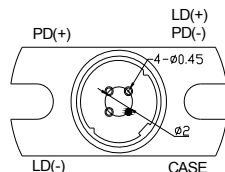
Direction A view
PLD1C-2



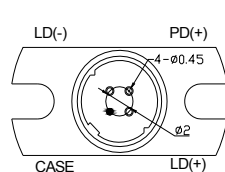
Direction A view
PLD1C-3



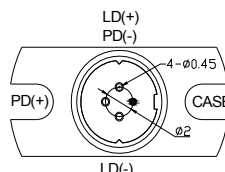
Direction A view
PLD1C-4



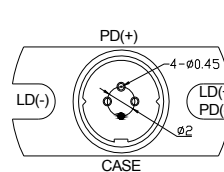
Direction A view
PLD2C-1(DEFAULT)



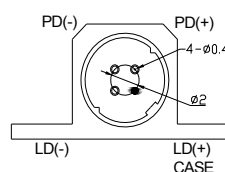
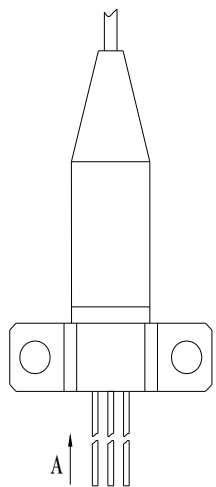
Direction A view
PLD2C-2



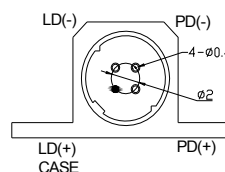
Direction A view
PLD2C-3



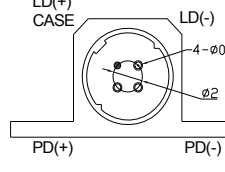
Direction A view
PLD2C-4



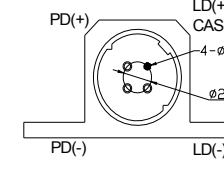
Direction A view
PLD1D-1(DEFAULT)



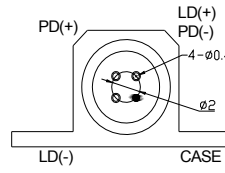
Direction A view
PLD1D-2



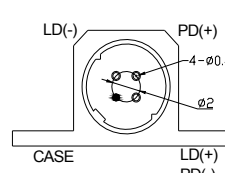
Direction A view
PLD1D-3



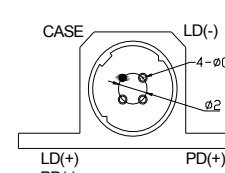
Direction A view
PLD1D-4



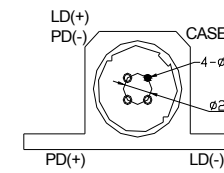
Direction A view
PLD2D-1(DEFAULT)



Direction A view
PLD2D-2

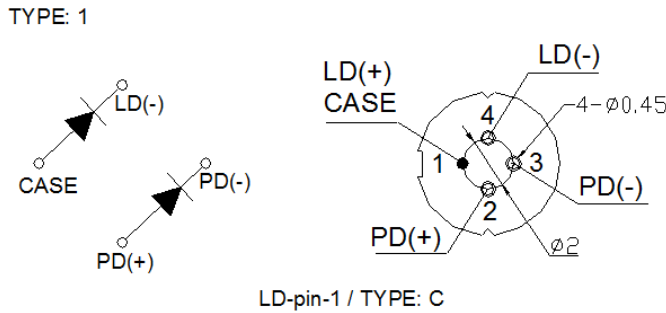


Direction A view
PLD2D-3



Direction A view
PLD2D-4

Pin Assignment:



Nomenclature:

HEFAP —3 □ □ □ □ □ □ □
 A B C D E F G

NO	Parameter	Detailed Description				
A	Wavelength	3=1310				
B	Data Rate	2=2.5G		3=3G		
C	Power	30=2-3mW				
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				
G	Isolator	Blank=None		G= Single Stage		G2=Dual Stage

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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