

From 1270nm to 1610nm MQW-DFB Laser Diode with pigtail

For 1.25G and 2.5G Application

HEDLP-XXXXXXXXXX

### Features:

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-DFB Laser Diode
- ◆ Low threshold, high slope efficiency and high output power LD
- ◆ Operating Case Temperature: -0°C to +70°C
- ◆ Single-mode fiber pigtailed with SC, FC,ST or LC connector
- ◆ Optional with Isolator



### Applications:

- ◆ High Speed Optical Transmission System
- ◆ Test Equipments

### General:

HEDLP-XXXXXXXXXA Series are InGaAsP/InP CWDM MQW-DFB laser diode modules designed for WDM 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.	$\lambda$ <sup>*Note2</sup> (nm)	Package series	Pin Type	Isolator	Connector	Data Rate
HEDLP-27110AFA2G	1270	A	LD-Pin-2	Single Stage	FC/APC	1.25G
HEDLP-31220BSA2G	1310	B	LD-Pin-2	Single Stage	SC/APC	2.5G
HEDLP-47110CT2	1470	C	LD-Pin-2	N=None	ST/PC	1.25G
HEDLP-49220DFA2G	1490	D	LD-Pin-2	Single Stage	FC/APC	2.5G
HEDLP-59110CT2	1590	C	LD-Pin-2	N=None	ST/PC	1.25G
HEDLP-61220DFA2G	1610	D	LD-Pin-2	Single Stage	FC/APC	2.5G

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

\*Note2: For the detailed CWDM wavelength, please refer to the following table.

**Absolute Maximum Ratings** <sup>\*Note3</sup>

Parameter	Symbol	Ratings	Unit
Storage Temperature	Tstg	-40~+85	°C
Operating Case Temperature	Top	-0~+70	°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

\*Note3: Exceeding any one of these values may destroy the device immediately.

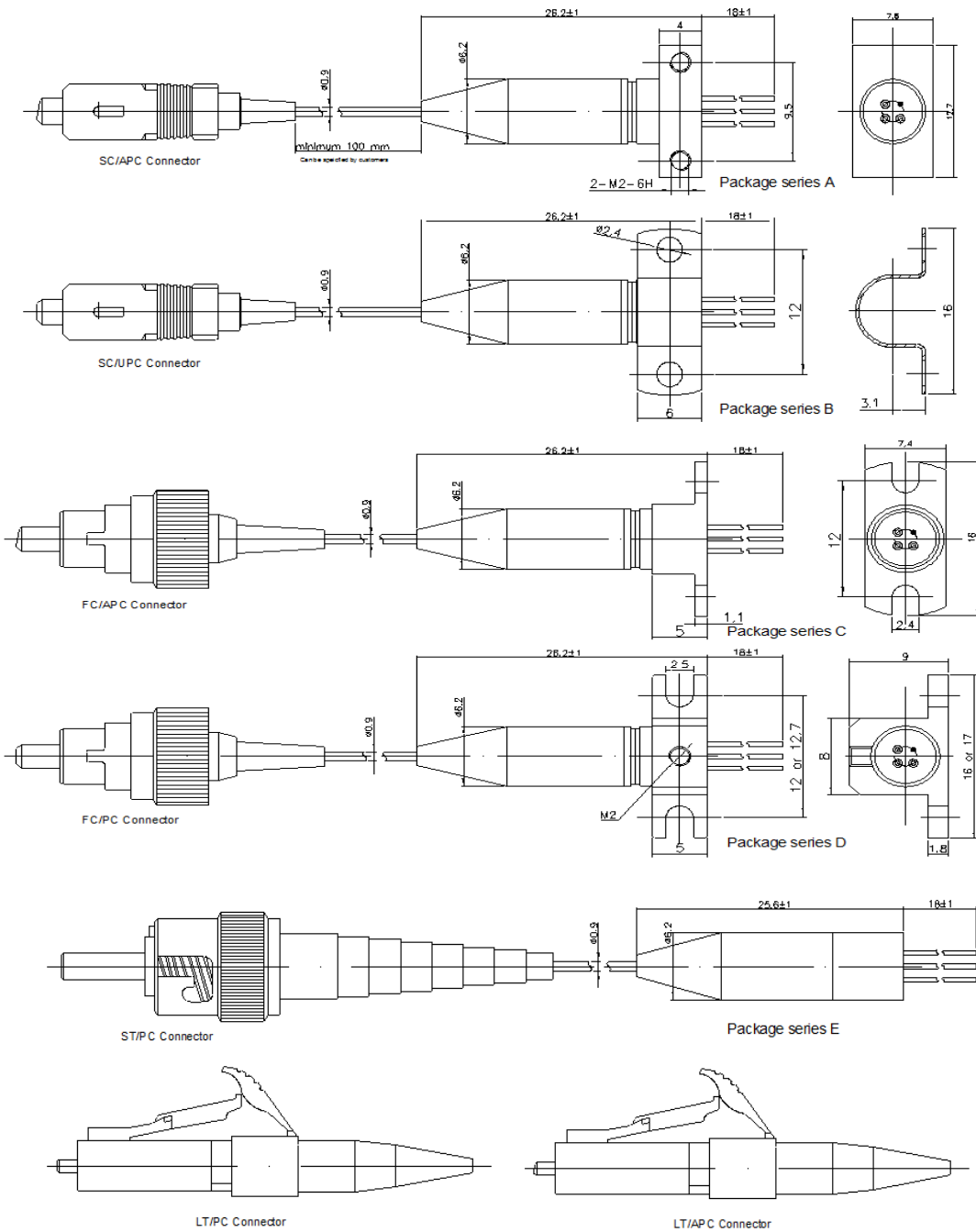
**Electrical and Optical Characteristics** <sup>\*Note4</sup>

(Po=3mW, SMF, Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	Ith	CW	—	10	15	mA
		CW, Tc=0~+70°C	—	—	40	
Output Power (After coupled)	Po	CW, If=Ith+20mA	1	—	3	mW
Operating Current	If	CW	—	30	40	mA
		CW, Tc=0~+70°C	—	40	70	
Operating Voltage	Vf	CW, Tc=0~+70°C	—	—	1.6	V
Slope Efficiency	Se	CW	0.05	—	0.15	mW/mA
Wavelength	$\lambda_c$	CW	$\lambda_c - 3$	$\lambda_c$	$\lambda_c + 3$	nm
Wavelength Temperature Coeff	—	CW, Tc=0~+70°C	0.07	—	0.1	nm/°C
Spectral Width	$\Delta\lambda$	CW, -20dB, Tc=0~+70°C	—	—	1	nm
Side-mode Suppression Ratio	SMSR	CW, Tc=0~+70°C	30	—	—	dB
Tracking Error	$\Delta Pf$	Im hold(@Pf=3mW(25°C)), CW, Tc=0~+70°C	-1	—	1	dB
Relative Intensity Noise <sup>*Note4</sup>	RIN	CW	—	—	-145	dB/Hz
Third order inter-modulation distortion	IMD3	OMI=20%	—	—	-55	dBc
Monitor Current	Im	CW, VrP=5V, Tc=0~+70°C	80	300	—	uA
Monitor Dark Current	Id	CW, Vrp=5V	—	1	10	nA
Monitor Capacitance	C	Vrp=5V, f=1MHz	—	—	10	pF
Connector Repeatability	—		-1	—	1	dB
Optical Isolation	—	Single Stage	30	—	—	dB
		Dual Stage	40	—	—	

\*Note4: Zero link loss, f=1780MHz

**Pigtail Package Dimension** \*Note5、 6、 7



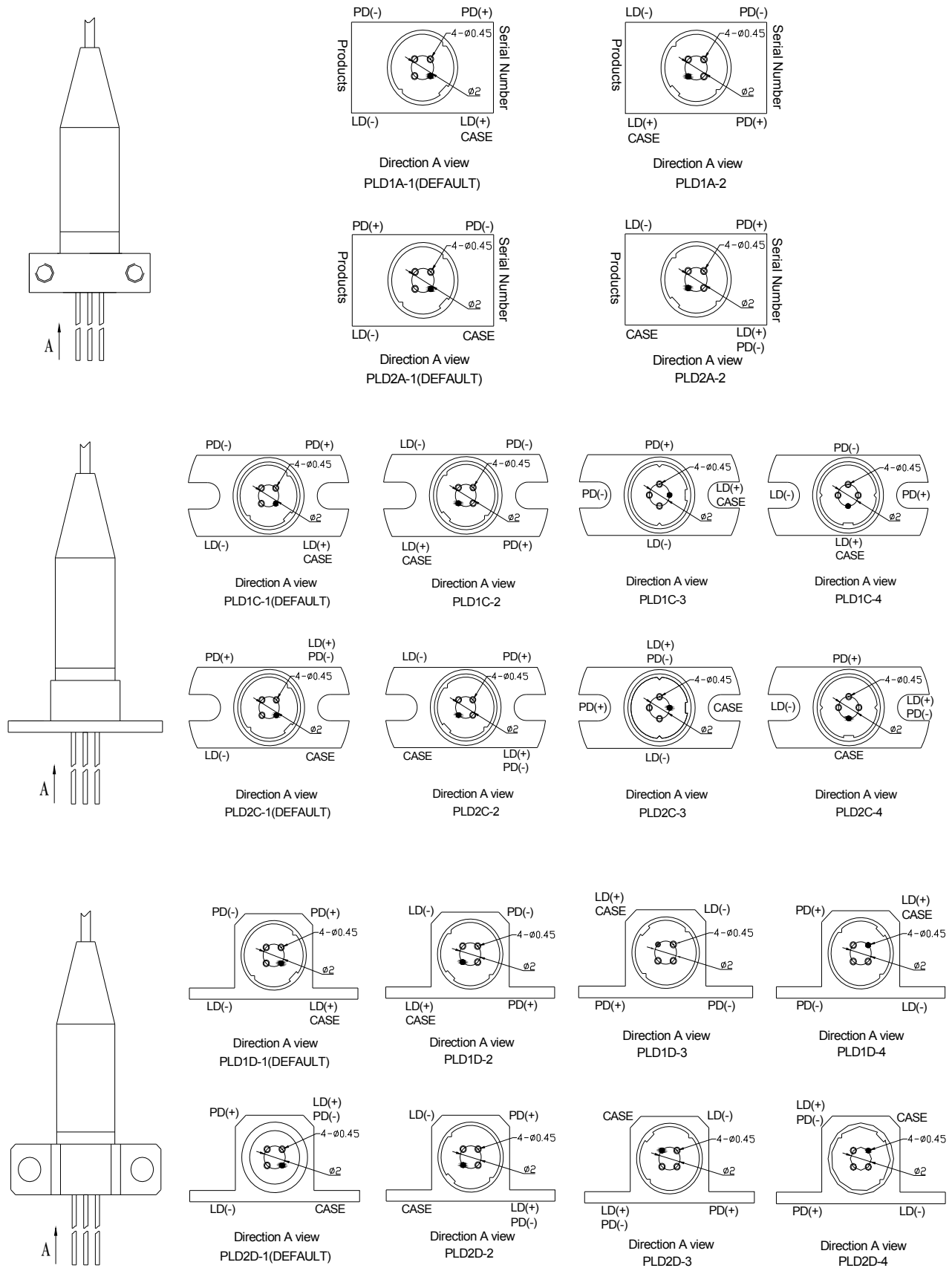
\*Note5: PIN direction and laser mark can be customized. Pigtail is standard SM fiber; the length also can be customized.

\*Note6: 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.

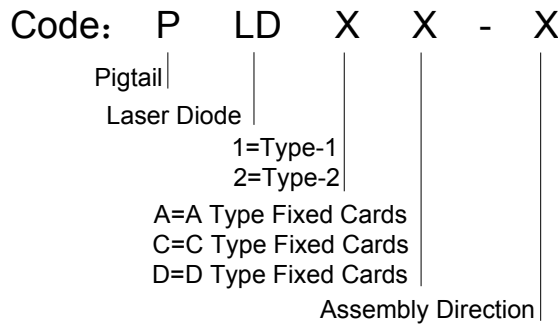
Fixed card type	A(mm)	B(mm)
D	16	12
D-S	17	12.7

\*Note7: 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:



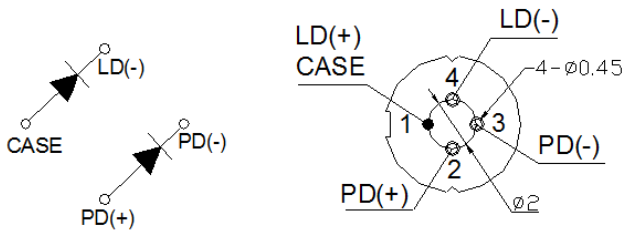
**Nomenclature of Assembly Direction** \*Note8



\*Note8: Please designate the code of assembly direction.

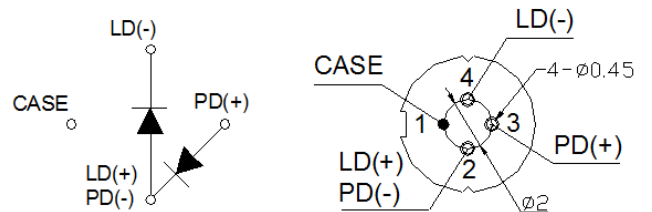
**Pin Assignment:**

TYPE: 1



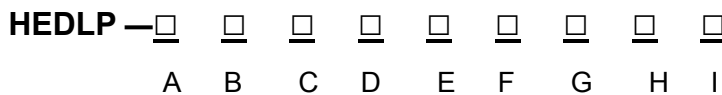
LD-pin-1 / TYPE: C

TYPE: 2



LD-pin-2 / TYPE: B

**Nomenclature:**



Order	Parameter	Detailed Description						
A	Wavelength	27=1270	29=1290	31=1310	33=1330	35=1350	37=1370	
		39=1390	41=1410	43=1430	45=1450	47=1470	49=1490	
		51=1510	53=1530	55=1550	57=1570	59=1590	61=1610	
B	Data Rate	1=1.25G			2=2.5G			
C	Power	10=0.8-1.8mw		20=1.9-3mw				
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	Blank =LD-pin-2			1=LD-pin-1			
G	Isolator	Blank=None		G= Single Stage		G2=Dual Stage		
H	Fiber Type	Blank=SM			M=MM			
I	Wavelength Spec	Blank=-3 / +3 nm						

**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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