

GDLP-xxxxxxxx

From 1270nm to 1610nm MQW-DFB laser diode with pigtail

For 1.25Gbps and 2.5Gbps application

Features

- ◆ Coaxial package
- ◆ InGaAsP/InP MQW-DFB laser diode
- ◆ Low threshold, high slope efficiency and high output power LD
- ◆ Operating case temperature: -10°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

GDLP-xxxxxxxx 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 ^{*Note1})

Part No.	λ ^{*Note2} (nm)	Package series	Pin type	Isolator	Connector	Data rate
GDLP-27110AFA1G	1270	A	LD-Pin-1	Single Stage	FC/APC	1.25Gbps
GDLP-31220BSA2G	1310	B	LD-Pin-2	Single Stage	SC/APC	2.5Gbps
GDLP-47110CT1	1470	C	LD-Pin-1	N=None	ST/PC	1.25Gbps
GDLP-51120BN1G	1510	B	LD-Pin-1	Single Stage	None	1.25Gbps
GDLP-57220ESA2G2	1570	E	LD-Pin-2	Dual Stage	SC/APC	2.5Gbps
GDLP-59110CT1	1590	C	LD-Pin-1	N=None	ST/PC	1.25Gbps
GDLP-61220DFA1G	1610	D	LD-Pin-1	Single Stage	FC/APC	2.5Gbps

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

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

Absolute maximum ratings ^{*Note3}

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+85	°C
Operating case temperature	Top	-10~+85	°C
Forward current (LD)	I _{fL}	150	mA
Reverse voltage (LD)	V _{rL}	2	V
Reverse voltage (PD)	V _{rP}	15	V
Reverse current (PD)	I _{rP}	2	mA
Soldering temperature (<10s)	Stemp	260	°C

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

Electrical and optical characteristics

(P_o=3mW, SMF, T_c=+25°C, unless otherwise noted.)

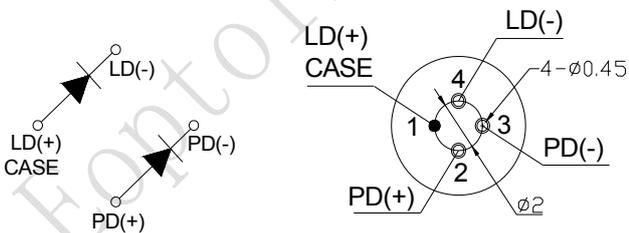
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Threshold current	I _{th}	—	10	15	mA	CW
		—	—	40		CW, T _c =-10°C~+85°C
Output power (after coupled)	P _o	1	—	3	mW	CW, I _f =I _{th} +20mA
Operating current	I _f	—	30	40	mA	CW
		—	40	70		CW, T _c =-10°C~+85°C
Operating voltage	V _f	—	—	1.6	V	CW, T _c =-10°C~+85°C
Slope efficiency	Se	0.05	—	0.15	mW/mA	CW
Wavelength	λ _c	(*Note4)			nm	CW
Wavelength temperature coefficient	—	0.07	—	0.1	nm/°C	CW, T _c =-10°C~+85°C
Spectral width	Δλ	—	—	1	nm	CW, -20dB, T _c =-10°C~+85°C
Side-mode suppression ratio	SMSR	30	—	—	dB	CW, T _c =-10°C~+85°C
Tracking error	ΔPf	-1.5	—	1.5	dB	I _m hold(@P _f =3mW(25°C)), CW, T _c =-10°C~+85°C
Relative intensity noise	RIN	—	—	-145	dB/Hz	CW
Third order inter-modulation distortion	IMD3	—	—	-55	dBc	OMI=20%
Monitor current	I _m	80	300	—	uA	CW, V _{rP} =5V, T _c =-10°C~+85°C
Monitor dark current	I _d	—	1	10	nA	CW, V _{rP} =5V
Monitor capacitance	C	—	—	10	pF	V _{rP} =5V, f=1MHz
Connector repeatability	—	-1	—	1	dB	
Optical isolation	—	30	—	—	dB	Single stage
		40	—	—		Dual stage

*Note4: Wavelength

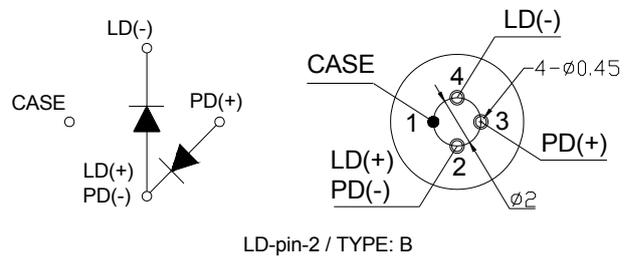
Part No.	Test condition	Limits(nominal -3/+3nm)			Unit
		Min.	Typ.	Max.	
GDLP-27xxxxx	CW, Po=1.5mW Tc=25°C	1267	1270	1273	nm
GDLP-29xxxxx		1287	1290	1293	
GDLP-31xxxxx		1307	1310	1313	
GDLP-33xxxxx		1327	1330	1333	
GDLP-35xxxxx		1347	1350	1353	
GDLP-37xxxxx		1367	1370	1373	
GDLP-39xxxxx		1387	1390	1393	
GDLP-41xxxxx		1407	1410	1413	
GDLP-43xxxxx		1427	1430	1433	
GDLP-45xxxxx		1447	1450	1453	
GDLP-47xxxxx		1467	1470	1473	
GDLP-49xxxxx		1487	1490	1493	
GDLP-51xxxxx		1507	1510	1513	
GDLP-53xxxxx		1527	1530	1533	
GDLP-55xxxxx		1547	1550	1553	
GDLP-57xxxxx		1567	1570	1573	
GDLP-59xxxxx		1587	1590	1593	
GDLP-61xxxxx		1607	1610	1613	

Pin assignment

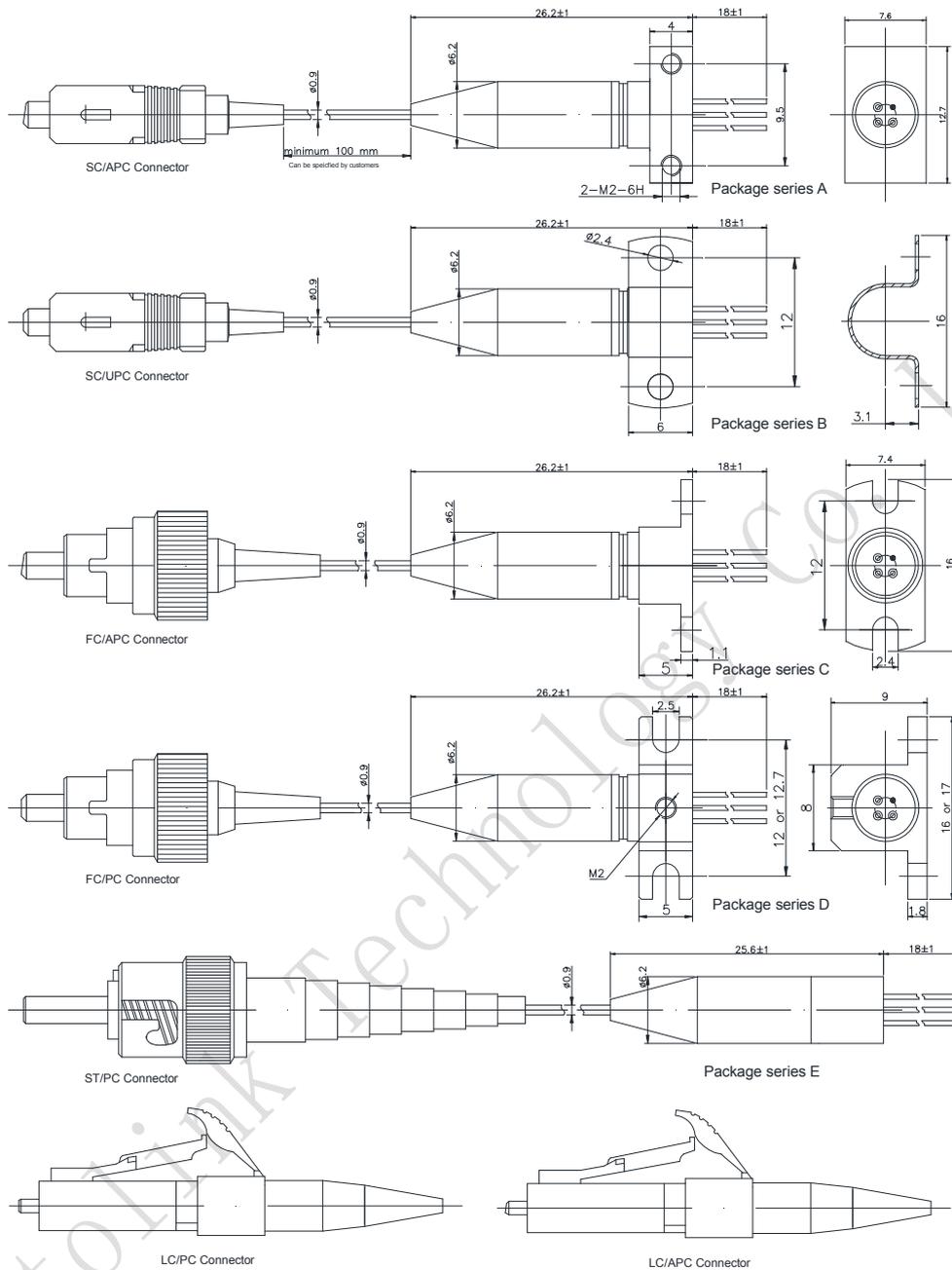
TYPE: 1



TYPE: 2



Pigtail package dimension *Note5· 6· 7



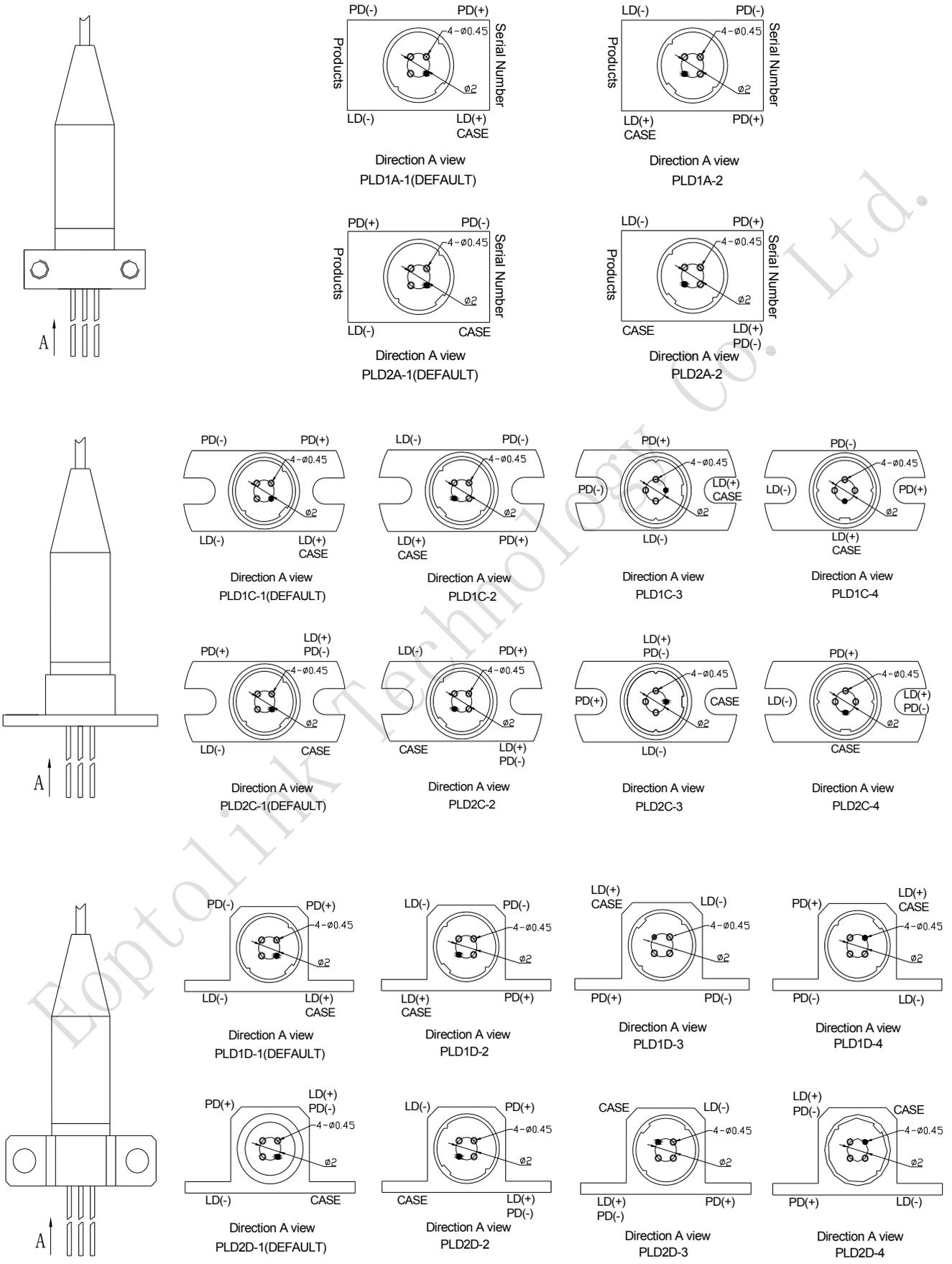
*Note5: PIN direction and laser mark can be customized. Pigtail is standard SM fiber; the length also can be customized.

*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.

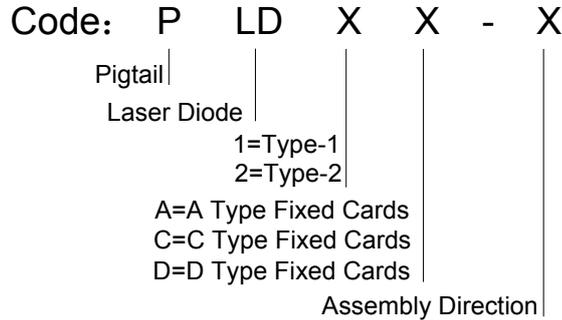
Fixed card type	A(mm)	B(mm)
D	16	12
D-S	17	12.7

*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

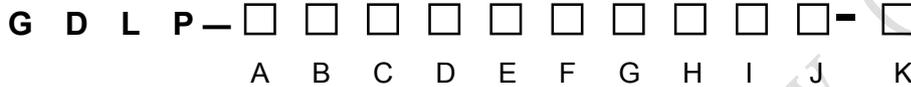


Nomenclature of assembly direction ^{*Note8}



*Note8: Please designate the code of assembly direction.

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=1.25Gb/s			2=2.5Gb/s		
C	Power ^{*Note9}	05=0.2-0.99mw		10=1-1.99mw		20=2-2.99mw	
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	
E	Connector	LA=LC/APC		N=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		
I	Wavelength Spec	Blank=-3 / +3 nm		B= -2 / +2 nm		C= -3 / +1 nm	
I	Wavelength Spec	D= -2 / +1 nm					
J	Fiber diameter	BLANK=0.9mm		1=0.25mm		2=2.0mm	
J	Fiber diameter	3=3.0mm					
K	Fibre length	BLANK=100±2cm		050=50±2cm		XXX=customer±2cm	

*Note9: Wavelength of 1570, 1590, 1570 nm, '20' power range is the power ≥1.8 mW

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.

Obtaining document

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<http://www.eoptolink.com>

Or contact Eoptolink Technology Inc., Ltd. listed at the end of the documentation to get the latest documentation.

Revision history

Verision	Initiated	Reviewed	Approved	Revision history	Release date
Vb-1	zore.Zhao	Kelly.Cao			2011-6-10
Vb-2	Jack.Jiang	zore.zhao Kelly.Cao		Changed power segments of information	2012-7-12
Vb-3	Jack.Jiang	zore.zhao		Changed details	2012-11-28
Vb-4	Jack.Jiang	zore.zhao		Changed details	2013-04-16
Vb-5	Jack.Jiang	zore.zhao		Changed output power (After coupled)	2013-12-16
Vb-6	zore.Zhao	Kelly.Cao		Increase in the peak wavelength information	2015-03-18
Vb-7	george.zhong	Kelly.Cao zore.Zhao		Updated nomenclature	2015-06-25
Vb-8	george.zhong	Kelly.Cao zore.Zhao		Updated nomenclature	2015-07-16
Vb-9	george.zhong	Kelly.Cao zore.Zhao		Changed storage temperature and operating case temperature	2017-12-05
Vc-1	george.zhong	Kelly.Cao zore.Zhao		Revise assembly drawing	2017-12-21

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Contact:

Add: IOT Industrial Park, Southwest Airport Economic Development Zone, Shuangliu County, Chengdu, Sichuan, China.

Tel: +86-28-67087999 ext.8081

Fax: +86-28-67087979

Postal: 610213

E-mail: sales@eoptolink.com

<http://www.eoptolink.com>