

GDLM-X1XXXXXA

**Preliminary Specification of 1.27um~1.61um CWDM MQW-DFB Laser Diode Module:
Analog CWDM of less than 2GHz application**



Features

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-DFB laser Diode
- ◆ Low threshold, high slope efficiency and high output power LD
- ◆ Operating case temperature: -20°C to +85°C
- ◆ Single-mode fiber pigtailed with SC, LC, FC or ST connector
- ◆ Optional with Isolator

Applications

- ◆ CATV Analog Return Path Optical Transmitter
- ◆ GSM/CDMA Optical Repeater
- ◆ W-CDMA/CDMA2000/TD-SCDMA Optical Repeater
- ◆ Microwave Transmission System
- ◆ Test Equipments

General

GDLM-XX1XXXXXA Series are 1.27um~1.61um InGaAsP/InP CWDM MQW-DFB laser diode modules designed for communication systems. These diodes have low threshold current and high performance at high temperature, which are ideally suitable Analog CWDM of optical microwave transmission applications. A laser diode is mounted into a coaxial package integrated with a single mode fiber pigtail, an isolator and an InGaAs monitor PD.

Ordering information (Standard version ^{*Note1})

Part No.	Package series	Pin Type	Isolator	Connector	RF Bandwidth
GDLM-27130ASA1G	A	LD-Pin-1	Single Stage	SC/APC	<2GHz
GDLM-33120BFA2G	B	LD-Pin-2	Single Stage	FC/APC	<2GHz
GDLM-39130CSA1G	C	LD-Pin-1	Single Stage	SC/APC	<2GHz
GDLM-43130DT1G	D	LD-Pin-1	Single Stage	ST/PC	<2GHz
GDLM-49120EFA2G2	E	LD-Pin-2	Dual Stage	FC/APC	<2GHz
GDLM-55130DF1G	D	LD-Pin-1	Single Stage	FC/PC	<2GHz
GDLM-57130CFA1G2	C	LD-Pin-1	Dual Stage	FC/APC	<2GHz
GDLM-59120DF2G	D	LD-Pin-2	Single Stage	FC/PC	<2GHz
GDLM-61120CFA1G2	C	LD-Pin-1	Dual Stage	FC/APC	<2GHz

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

Absolute maximum ratings^{*Note2}

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+100	□
Operating case temperature	Top	-20~+85	□
Forward current (LD)	IfL	120	mA
Reverse voltage (LD)	VrL	2	V
Reverse voltage (PD)	VrP	10	V
Soldering temperature (<10s)	Stemp	260	□

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

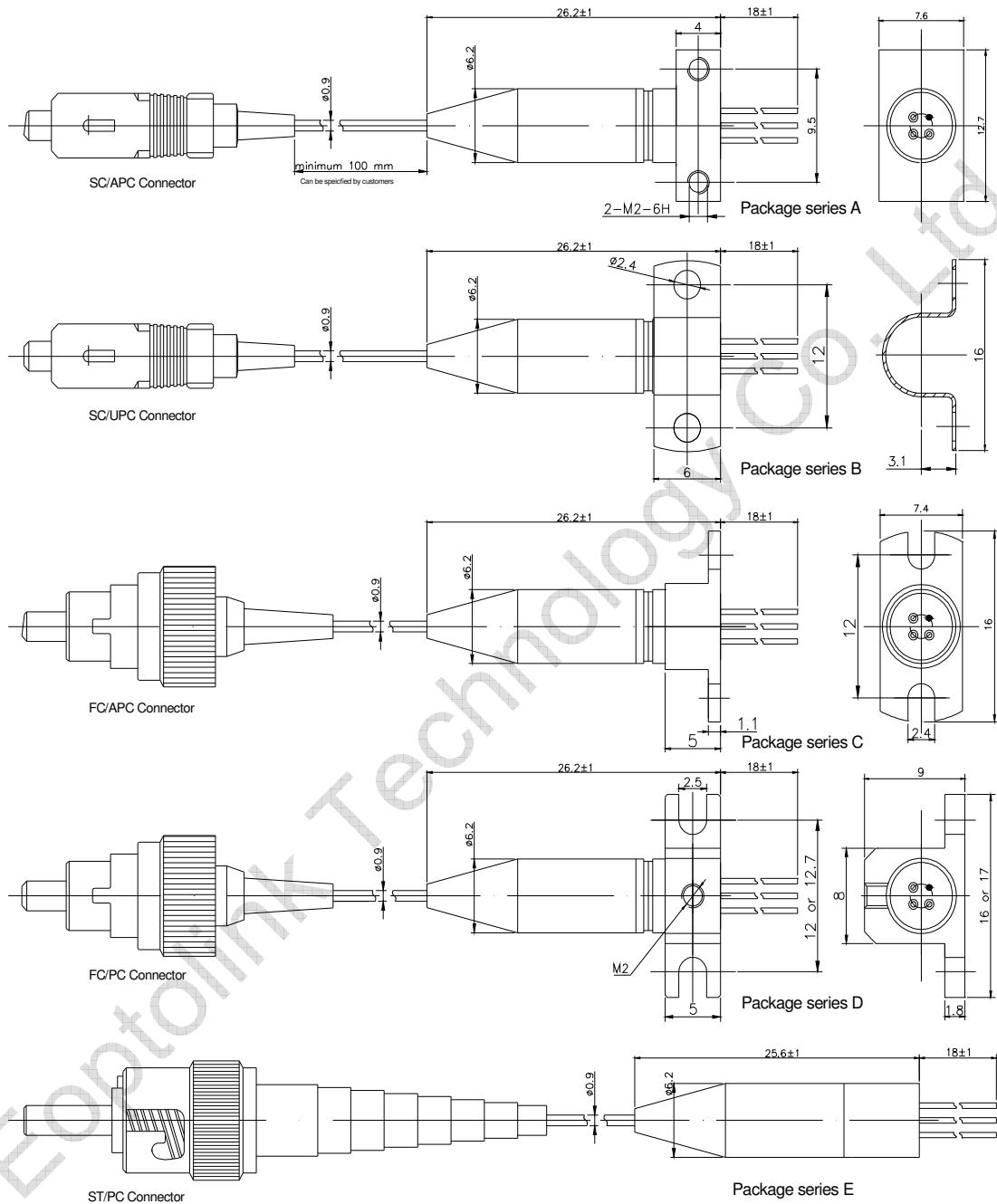
Electrical and optical characteristics

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Threshold current	Ith	CW	—	12	—	mA
		CW, Tc=85°C	—	35	—	
Output Power (After coupled)	Po	CW, If=Ith+20mA	1	2.5	3	mW
Operating voltage	Vf	CW, Tc=-20~+85°C	—	—	1.6	V
Slope efficiency	SE	CW, 1290 nm to 1310 nm	0.15	—	—	mW/mA
		CW, 1330 nm to 1390 nm	0.14	—	—	mW/mA
		CW, 1410 nm to 1470 nm	0.13	—	—	mW/mA
		CW, 1470 nm to 1550 nm	0.12	—	—	mW/mA
		CW, 1570 nm to 1610 nm	0.11	—	—	mW/mA
Wavelength	λ_c	CW	λ_c-7	λ_c	λ_c+7	nm
Spectral Width	$\Delta\lambda$	CW, -20dB, Tc=-20~+85°C	—	0.1	1	nm
Wavelength Temperature Co-efficiency	—	CW, T-20~+85°C	—	0.09	0.12	nm/□
Side-mode suppression ratio	SMSR	CW, Tc=-20~+85°C	30	40	—	dB
Tracking error	ΔPf	Im hold(@Pf=3mW(25□)), CW, TC=-20~+85°C	-1	—	1	dB
Rise/Fall Times	t _r , t _f				0.1	ns
Relative intensity noise ^{*Note3}	RIN	CW	—	—	-145	dB/Hz
Monitor current	Im	CW, VrP=5V, Tc=-20~+85°C	75	—	750	uA
Monitor dark current	Id	CW, Vrp=5V	—	—	200	nA
Monitor capacitance	C	Vrp=5V, f=1MHz	—	—	10	pF
Connector repeatability	—		-1	—	1	dB
Optical Isolation	—	Single Stage	30	—	—	dB
	—	Dual Stage	40	—	—	

*Note3. Zero link loss, $f=1780\text{MHz}$

Pigtail Package dimension and pin assignment*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.

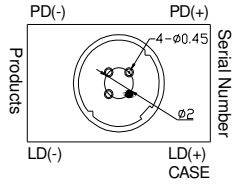
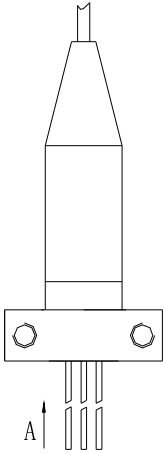
	A(mm)	B(mm)
D	16	12

D-S	17	12.7
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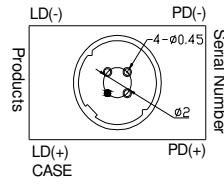
*Note6: For the package series B, the fix card is fixed by customer self. For the detailed information of fix card of A, C, D package series, please refers the following graphs.

The direction of fix card

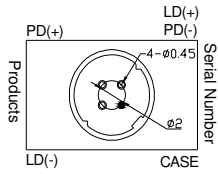
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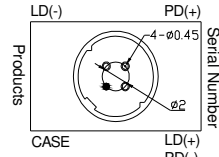
Direction A view
PLD1A-1 (DEFAULT)



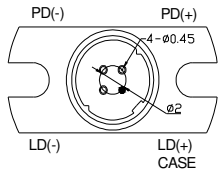
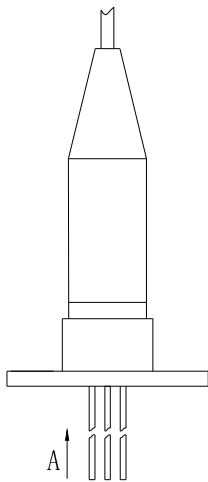
Direction A view
PLD1A-2



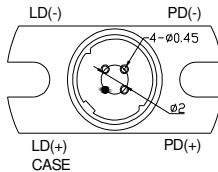
Direction A view
PLD2A-1 (DEFAULT)



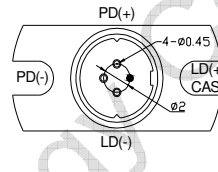
Direction A view
PLD2A-2



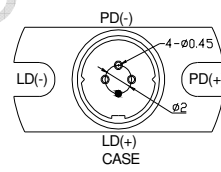
Direction A view
PLD1C-1 (DEFAULT)



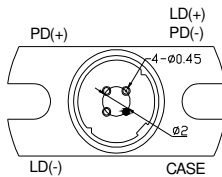
Direction A view
PLD1C-2



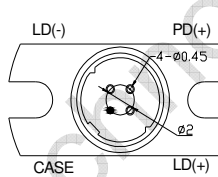
Direction A view
PLD1C-3



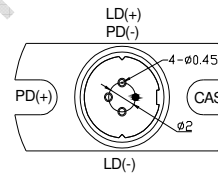
Direction A view
PLD1C-4



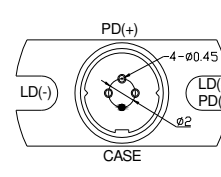
Direction A view
PLD2C-1 (DEFAULT)



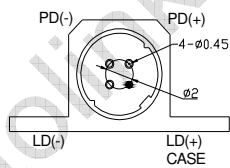
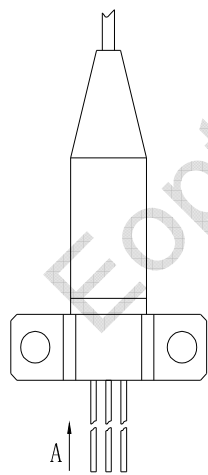
Direction A view
PLD2C-2



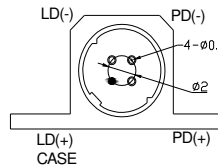
Direction A view
PLD2C-3



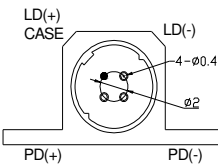
Direction A view
PLD2C-4



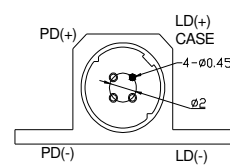
Direction A view
PLD1D-1 (DEFAULT)



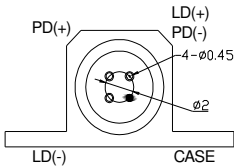
Direction A view
PLD1D-2



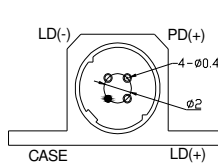
Direction A view
PLD1D-3



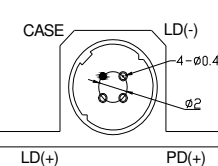
Direction A view
PLD1D-4



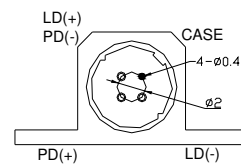
Direction A view
PLD2D-1 (DEFAULT)



Direction A view
PLD2D-2

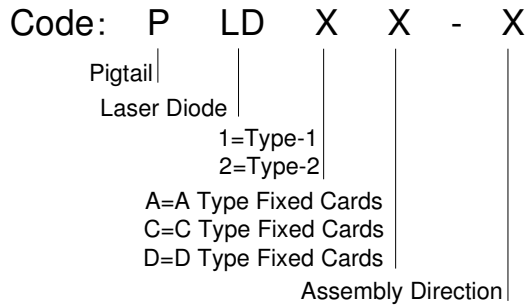


Direction A view
PLD2D-3



Direction A view
PLD2D-4

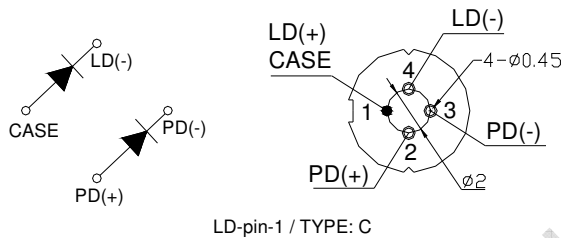
Nomenclature of assembly direction^{*Note7}



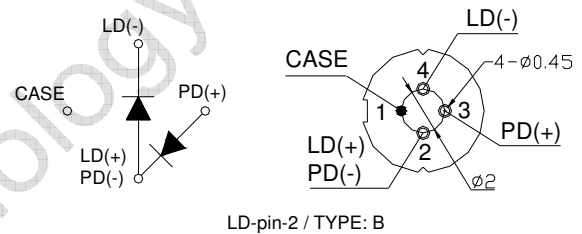
*Note7: Please designate the code of assembly direction.

Pin Assignment

TYPE: 1



TYPE: 2



Nomenclature

G D L M — □ □ □ □ □ □ □ □
A B C D E F G H

Order	Parameter	Detailed Description					
A	Center 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	RF Bandwidth	1<2GHz					
C	Power	10=0.8-1.8mw		20=1.8-2.8mw		30=2.8-3.5mw	
D	Package series	A	B	C	D	E	
E	Connector	F=FC/PC		S=SC/PC		T=ST/PC	
		M=MU/PC		FA=FC/APC		SA=SC/APC	
F	Pin Type	1=LD-pin-1			2=LD-pin-2		
G	Isolator	N=None		G= Single Stage		G2=Dual Stage	
H	Wavelength Spec	A=-3/+3nm		B= -2/+2nm		C= -3/+1nm	
				D= -2/+1nm			

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

You can visit our website:

<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	Release Date
Va-4	Zore.Zhao	Kelly.Cao		2009-12-26

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Contact:

Add: Floor 5, Building 2, No. 21 Gaopeng Avenue, High-Tech District, CHENGDU, SICHUAN 610041 P.R.
CHINA

Tel: (+86) 028-85122709 ext 816 & 809

Fax: (+86) 028-85121912

Postal: 610041

E-mail:sales@eoptolink.com

Eoptolink Technology Co. Ltd.