

1550nm MQW-DFB Pigtail Analog LD from 1GHz to 2GHz

OSMDLM-5XXXXXX

Features:

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-DFB 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/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:

OSMDLM-5XXXXXX Series are 1550nm InGaAsP/InP MQW-DFB laser diode modules designed for fiber optic communication systems. These modules are pigtail modules, and have low threshold current and high performance at high temperature.

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
OSMDLM-5010ASA1G	A	LD-Pin-1	Single Stage	SC/APC	<1GHz
OSMDLM-5120BFA2G	B	LD-Pin-2	Single Stage	FC/APC	<2GHz
OSMDLM-5130CSA1G	C	LD-Pin-1	Single Stage	SC/APC	<2GHz
OSMDLM-5020DT1G	D	LD-Pin-1	Single Stage	ST/PC	<1GHz
OSMDLM-5120EFA2G2	E	LD-Pin-2	Dual Stage	FC/APC	<2GHz
OSMDLM-5120CFA1G2	C	LD-Pin-1	Dual Stage	FC/APC	<2GHz

*Note1: For more ordering information, please refer to nomenclature or contact OSM sales.

Absolute Maximum Ratings: *Note2

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.

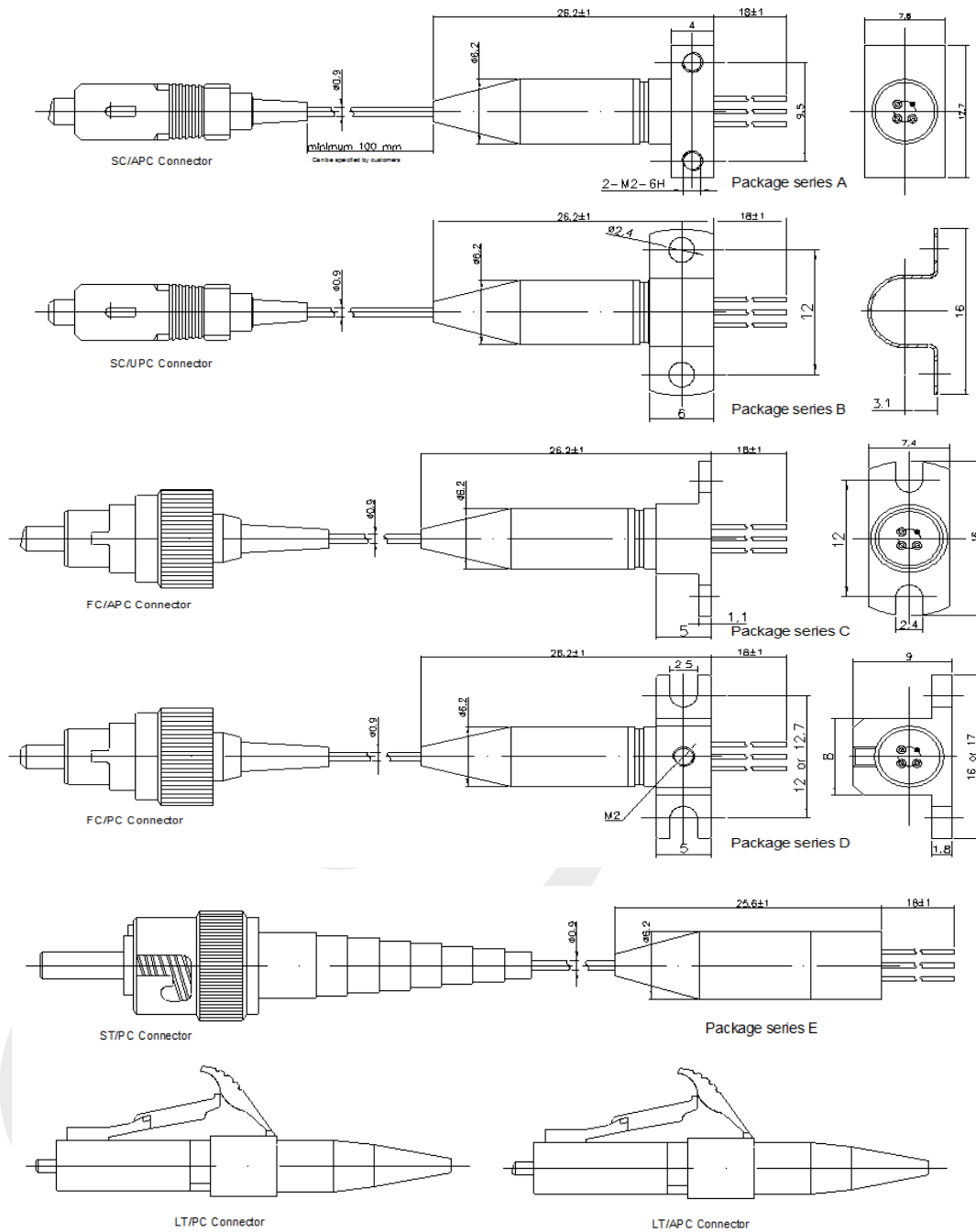
Electrical and Optical Characteristics:

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	Ith	CW	—	10	15	mA
		CW, Tc=-40~+85	—	—	50	
Output Power (After coupled)	Po	CW, If=Ith+20mA	1	2.5	3	mW
Operating Current	If	CW	—	30	40	mA
		CW, Tc=-40~+85	—	40	70	
Operating Voltage	Vf	CW, Tc=-40~+85	—	—	1.6	V
Slope Efficiency	Se	CW	0.05	—	0.15	mW/mA
Wavelength	λ_c	CW	1540	1550	1560	nm
		CW, Tc=-40~+85	1530	—	1570	
Spectral Width	$\Delta\lambda$	CW, -20dB, Tc=-40~+85	—	—	1	nm
Side-mode suppression ratio	SMSR	CW, Tc=-40~+85	30	—	—	dB
Tracking Error	ΔPf	Im hold(@Pf=3mW(25°C)), CW, TC=-40~+85	-1	—	1	dB
Relative Intensity Noise *Note3	RIN	CW	—	—	-145	dB/Hz
Monitor Current	Im	CW, VrP=5V, Tc=-40~+85	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	—	—	

*Note3: Zero link loss, f=1780MHz

Pigtail Package Dimension: *Note4、5、6



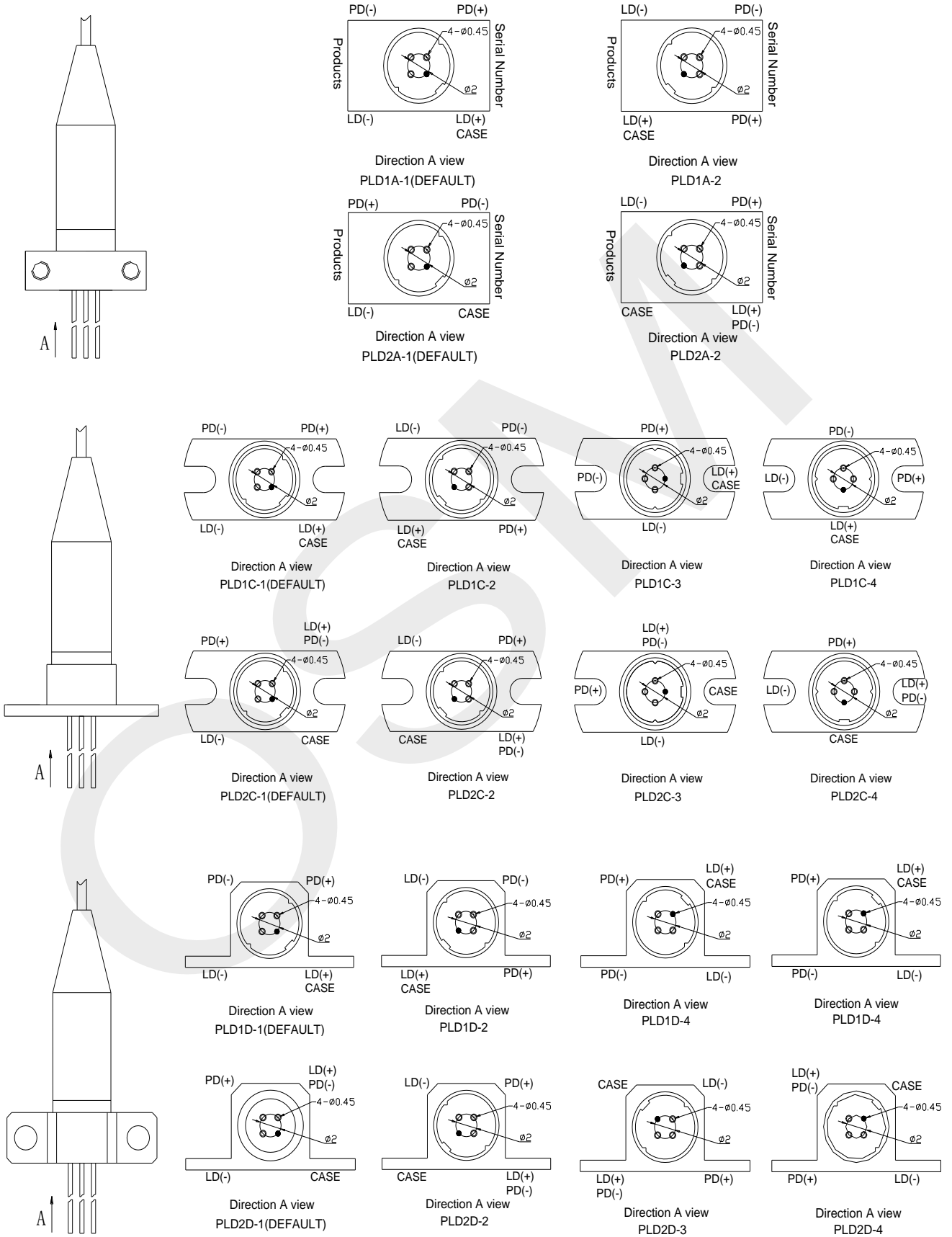
*Note4: PIN direction and laser mark can be customized. Pigtail is standard SM fiber; the length also can be customized.

*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

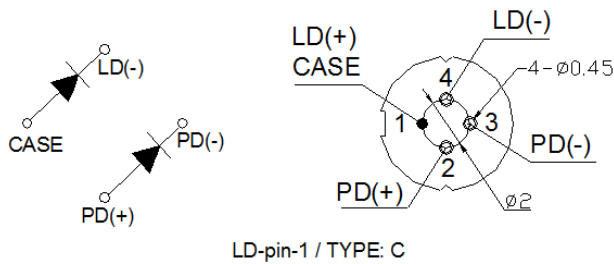
*Note6: For the package series B, the fix card is fixed by customer self. For the detailed information of fix card of A, C, D package series, please refers the following graphs.

The Direction of Fix Card:



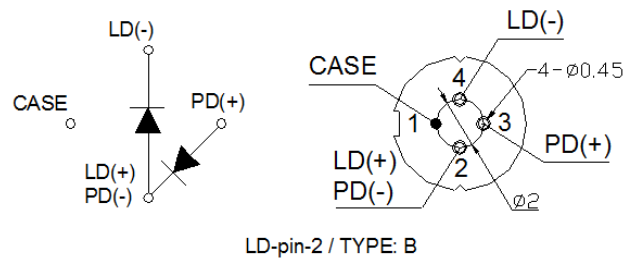
Pin Assignment:

TYPE: 1



LD-pin-1 / TYPE: C

TYPE: 2



LD-pin-2 / TYPE: B

Nomenclature:

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 A B C D E F G

No.	Parameter	Detailed Description			
A	Center Wavelength	5=1550			
B	RF Bandwidth	0<1GHz		1<2GHz	
C	Power	10=0.8-1.8mw	20=1.81-2.8mw	30=2.81-3.5mw	
D	Package Series	A	B	C	D E
E	Connector	F=FC/PC		S=SC/PC	
		FA=FC/APC		SA=SC/APC	
		T=ST/PC		L=LC/PC	
		LA=LC/APC		Blank=None	
F	Pin Type	1=LD-pin-1		2=LD-pin-2	
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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