

## 1310nm MQW-DFB Laser Diode Receptacle Module

### OSMDLR-5XXXX

#### Features:

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-DFB Laser Diode
- ◆ Data Rate up to 2.5G
- ◆ Low threshold, high slope efficiency and high output power LD
- ◆ Maximum Soldering Temperature/Time: 260°C/10s
- ◆ Operating Case Temperature: -40°C to +85°C
- ◆ RoHS6 Compliant Products Available



#### Applications:

- ◆ Optical Digital Transmission System
- ◆ Test Equipments

#### General:

OSMDLR-5XXXXX Series are 1550nm InGaAsP/InP MQW-DFB laser diode modules designed for fiber communication systems. These modules are transmitter optical sub-assembly with low threshold current and high performance at high temperature, which are ideally suitable for long reach applications.

A laser diode is mounted into a coaxial package integrated with a single-mode fiber-stub, an isolator and an InGaAs monitor PD.

#### Ordering Information: (Standard version <sup>\*Note1</sup>)

Part No.	Package Series	Pin Type	Isolator	Connector	Data Rate
OSMDLR-5105A2	A	LD-Pin-2	N=None	FC-A	1.25G
OSMDLR-5110B2G	B	LD-Pin-2	Single Stage	FC-B	1.25G
OSMDLR-5220C1G	C	LD-Pin-1	Single Stage	FC-C	2.5G
OSMDLR-5110D1G	D	LD-Pin-1	Single Stage	FC-D	1.25G
OSMDLR-5120E2G	E	LD-Pin-2	Single Stage	ST	1.25G
OSMDLR-5210F2	F	LD-Pin-2	N=None	SC	2.5G
OSMDLR-5220F1G	F	LD-Pin-1	Single Stage	SC	2.5G

\*Note1: For more ordering information, please refer the nomenclature and 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)	IFD	150	mA
Reverse Voltage (LD)	VrL	2	V
Reverse Voltage (PD)	VrP	20	V
Reverse Current (PD)	IrP	2	mA
Soldering Temperature (<10s)	Stemp	260	°C

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

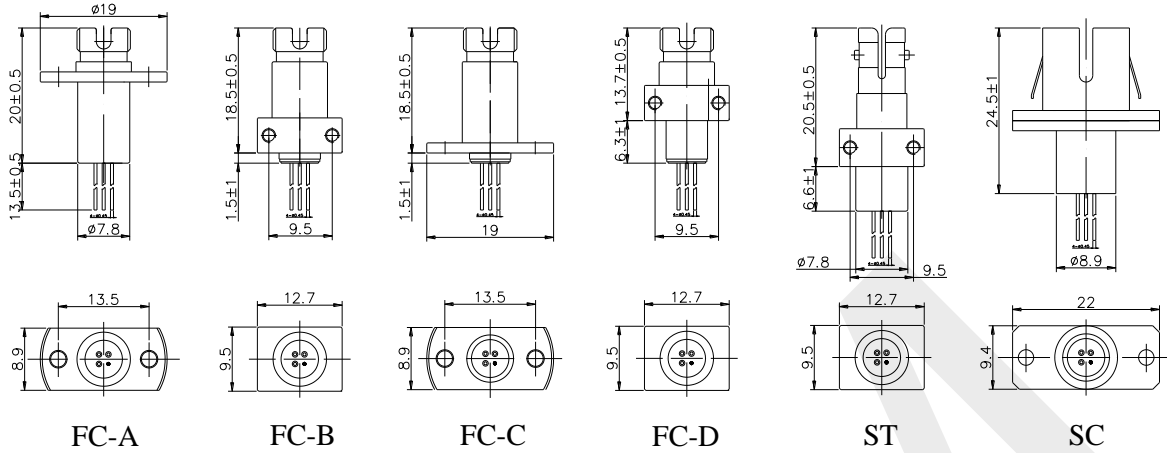
**Electrical and Optical Characteristics:** \*Note3

(Po=1.5mW, SMF, Tc=+25°C, unless otherwise noted.)

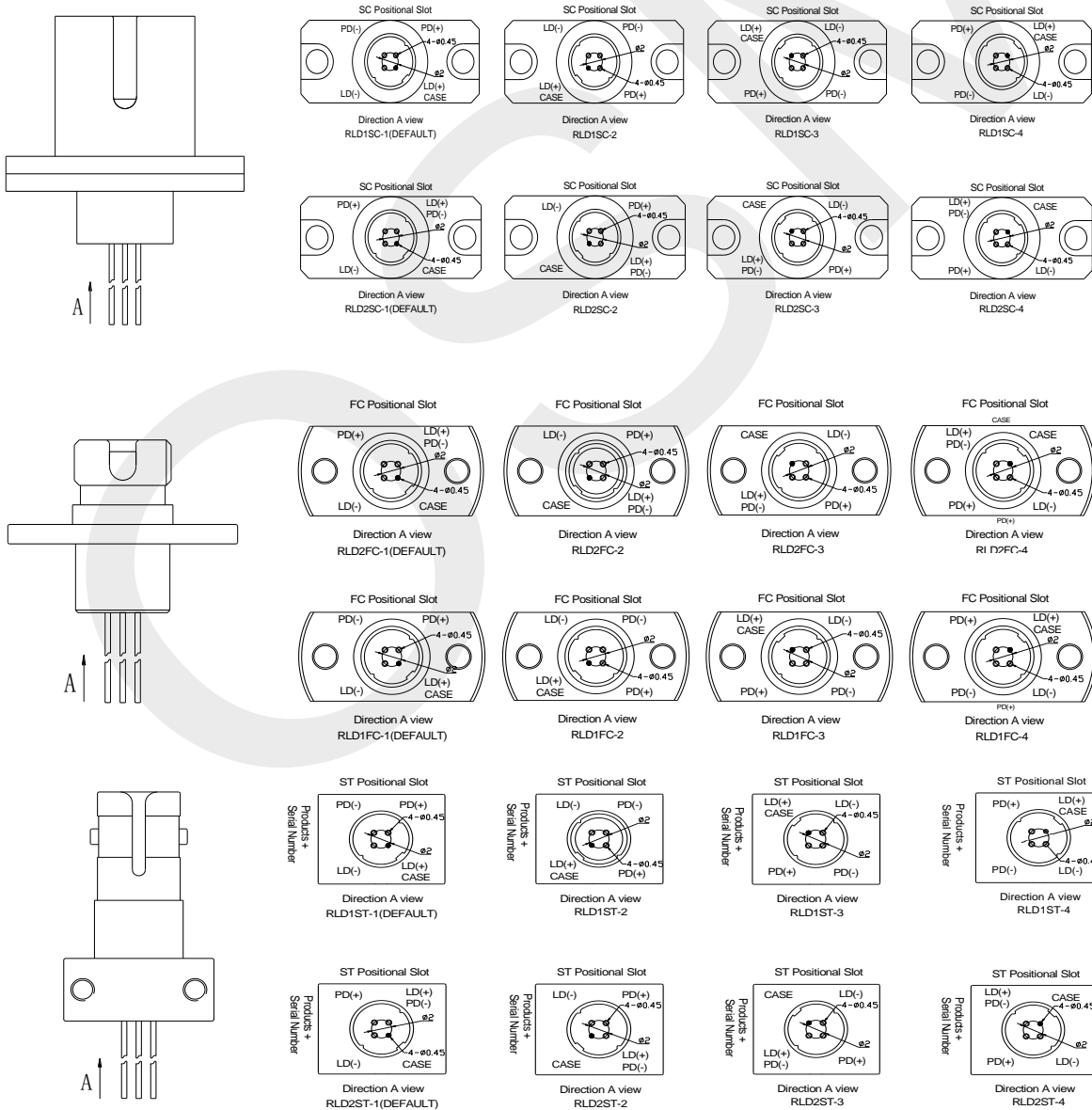
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	Ith	CW	—	8	15	mA
Fiber Coupling Power	Pf	CW, If=Ith+20mA	1	1.5	2.8	mW
Operating Voltage	Vf	CW, Tc=-40~+85°C	—	1.2	1.6	V
Slope Efficiency *Note3	Se	CW, Average(Ith to Ith+20mA)	0.05	0.14	-	mW/mA
Peak Wavelength	$\lambda_p$	CW	1540	1550	1565	nm
		CW, Tc=-40~+85°C	1530		1575	
Side mode suppression ratio	SMSR	CW, Tc=-40~+85°C	35	40		dB
Rise Time	tr	Ib=Ith, 20-80%	—		0.2	ns
Fall Time	tf	Ib=Ith, 80-20%	—	0.15	0.2	ns
Tracking Error	$\Delta P_f$	(@Pf=0.16mW(25°C)) CW, Tc=-40~+85°C	-1.5	—	1.5	dB
Monitor Current	Im	CW, VrP=5V, Tc=-40~+85°C	50	500	900	uA
Monitor Dark Current	Id	VrP=5V	—	—	100	nA
Monitor Capacitance	C	VrP=5V, f=1MHz	—	10	20	pF
Connector Repeatability	—		-1	—	1	dB
Optical Isolation	—	Single Stage	30			dB
		Dual Stage	40			

\*Note3: Under normal condition, when the threshold current plus 20mA, the output power is up 2.8mW. When the threshold current plus 30mA, the output power is more than 3mW.

### Package Dimension:

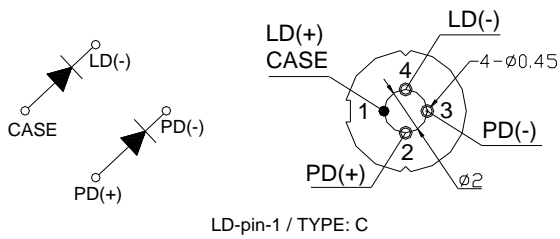


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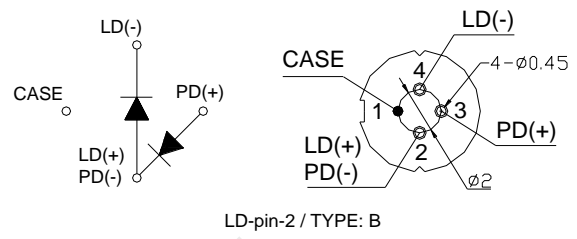
## Pin Assignment:

TYPE: 1



LD-pin-1 / TYPE: C

TYPE: 2



LD-pin-2 / TYPE: B

## Nomenclature:

OSMDLR — 5

A B C D E F G

Order	Parameter	Detailed Description					
A	Center Wavelength	5=1550					
B	Data Rate	1=1.25G			2=2.5G		
C	Power	05=0.2-0.99mW		10=1-1.99 mW		20=2-2.99 mW	
D	Package Series	A=FC-A	B=FC-B	C=FC-C	D=FC-D	E=ST	F=SC
E	Pin Type	1=LD-pin-1			2=LD-pin-2		
F	Isolator	Blank=None		G= Single Stage		G2=Dual Stage	
G	Fiber Type	Blank=SM			M=MM		

## 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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