

1550nm MQW-FP Laser Diode with pigtail for 1.25G and 2.5G Application

OSMFLP-5XXXXXXX



Features:

- ◆ Coaxial Package
- ◆ InGaAsP/InP MQW-FP 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, FC, ST or LC connector
- ◆ Optional with Isolator

Applications:

- ◆ High Speed Optical Transmission System
- ◆ Test Equipments

General:

OSMFLP-XXXXXXX Series are 1550nm InGaAsP/InP MQW-FP laser diode modules designed for 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 (nm) | Package series | Pin Type | Isolator | Connector | Data Rate |
|------------------|----------------|----------------|----------|--------------|-----------|-----------|
| OSMFLP-5110AFA2G | 1550 | A | LD-Pin-2 | Single Stage | FC/APC | 1.25G |
| OSMFLP-5205BSA2 | 1550 | B | LD-Pin-2 | N=None | SC/APC | 2.5G |
| OSMFLP-5105CT2 | 1550 | C | LD-Pin-2 | N=None | ST/PC | 1.25G |
| OSMFLP-5205DFA1G | 1550 | D | LD-Pin-1 | N=None | FC/APC | 2.5G |
| OSMFLP-5110ESA2 | 1550 | E | LD-Pin-2 | N=None | SC/APC | 1.25G |

*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) | 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.

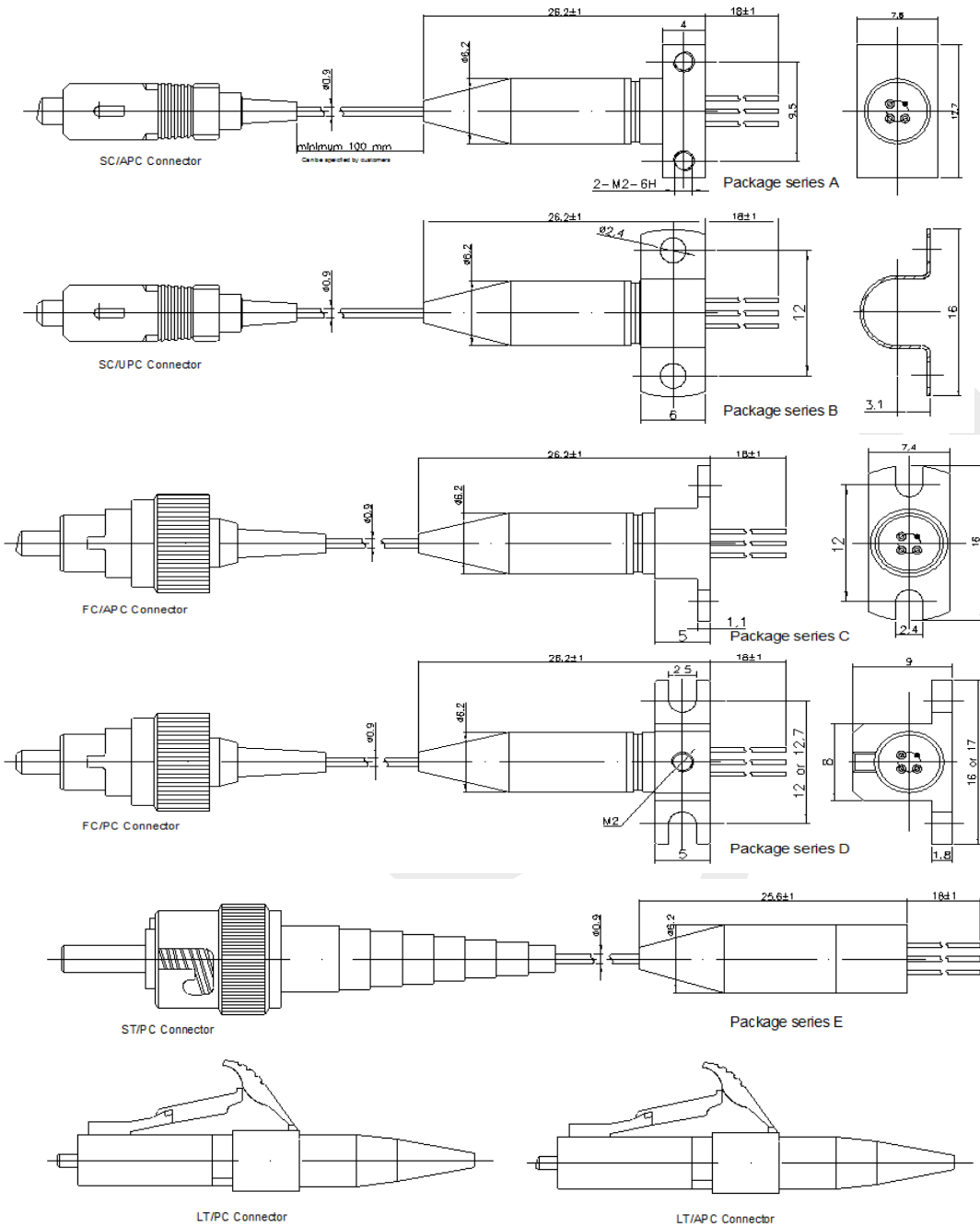
Electrical and Optical Characteristics:

(Po=0.3mW, 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 *Note3 | 0.2 | 0.5 | 1.5 | mW |
| Operating Voltage | Vf | CW, Tc=-40~+85°C | — | 1.2 | 1.6 | V |
| Slope Efficiency *Note3 | Se | CW, Average(Ith to Ith+20mA) | — | — | 0.9 | mW/mA |
| Peak Wavelength | λ_p | CW | 1520 | 1550 | 1580 | nm |
| | | CW, Tc=-40~+85°C | 1490 | | 1585 | |
| Spectral Width | $\Delta\lambda$ | CW, 20dB down, | — | 1.5 | 3 | nm |
| Rise Time | tr | Ib=Ith, 20-80%, Tc=-40~+85°C | — | | 0.05 | ns |
| Fall Time | tf | Ib=Ith, 80-20%, Tc=-40~+85°C | — | 0.15 | 0.05 | ns |
| Tracking Error | ΔPf | I _m hold(@Pf=0.16mW(25°C)) CW, Tc=-40~+85°C | -1.5 | — | 1.5 | dB |
| Monitor Current | I _m | CW, VrP=5V, Tc=-40~+85°C | 200 | | 1000 | uA |
| Monitor Dark Current | I _d | VrP=5V | — | — | 10 | nA |
| Monitor Capacitance | C | VrP=5V, f=1MHz | — | — | 20 | pF |
| Connector Repeatability | — | | -1 | — | 1 | dB |
| Optical Isolation | — | Single Stage | 30 | — | — | dB |
| | — | Dual Stage | 40 | — | — | |

*Note3: Please confirm Pin direction with us before purchase LD power above 1mW.

Pigtail Package Dimension: *Note4、 5、 6



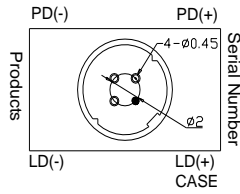
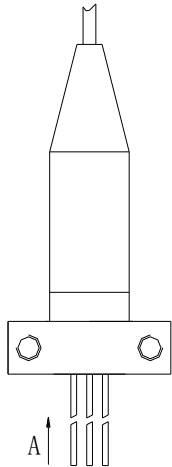
*Note4: PIN direction and laser mark can be customized. Pigtail is standard SM fiber; the length also can be customized.

*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.

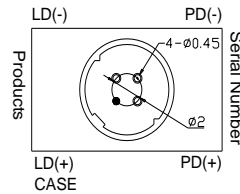
| Fixed card type | A(mm) | B(mm) |
|-----------------|-------|-------|
| D | 16 | 12 |
| D-S | 17 | 12.7 |

*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.

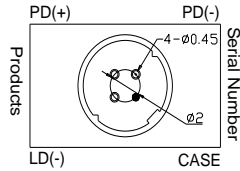
The Direction of Fix Card:



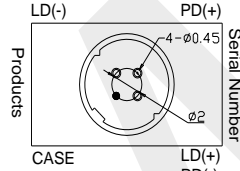
Direction A view
PLD1A-1(DEFAULT)



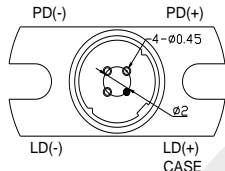
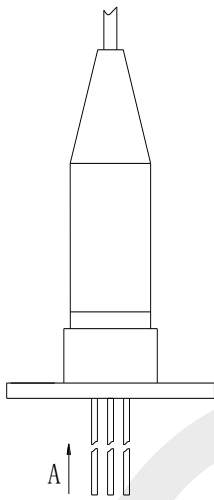
Direction A view
PLD1A-2



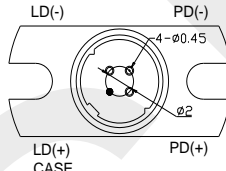
Direction A view
PLD2A-1(DEFAULT)



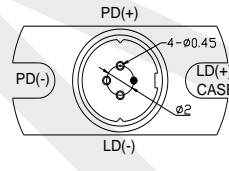
Direction A view
PLD2A-2



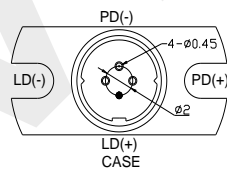
Direction A view
PLD1C-1(DEFAULT)



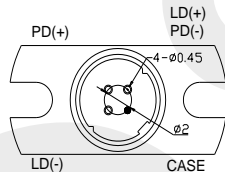
Direction A view
PLD1C-2



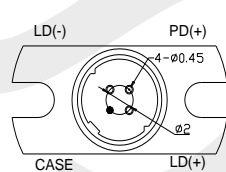
Direction A view
PLD1C-3



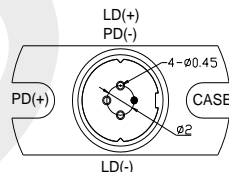
Direction A view
PLD1C-4



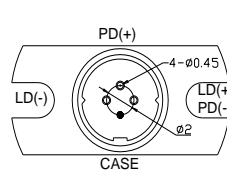
Direction A view
PLD2C-1(DEFAULT)



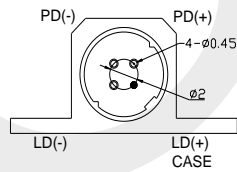
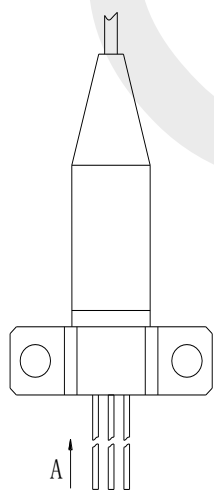
Direction A view
PLD2C-2



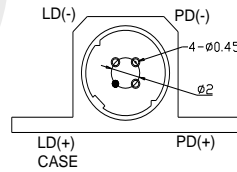
Direction A view
PLD2C-3



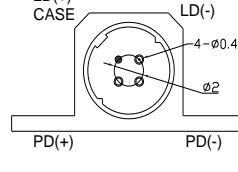
Direction A view
PLD2C-4



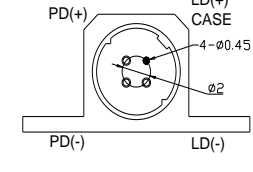
Direction A view
PLD1D-1(DEFAULT)



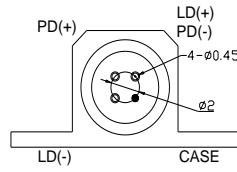
Direction A view
PLD1D-2



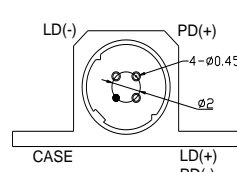
Direction A view
PLD1D-3



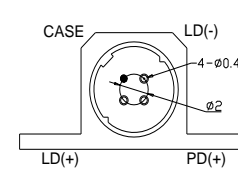
Direction A view
PLD1D-4



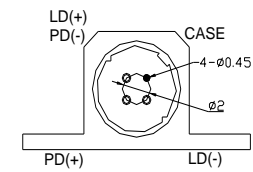
Direction A view
PLD2D-1(DEFAULT)



Direction A view
PLD2D-2

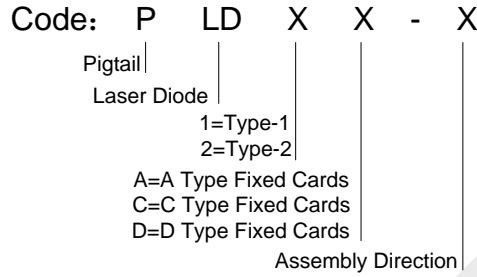


Direction A view
PLD2D-3



Direction A view
PLD2D-4

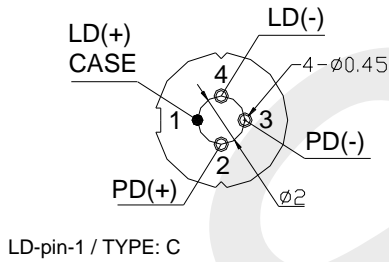
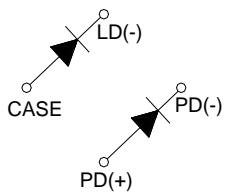
Nomenclature of Assembly Direction: *Note7



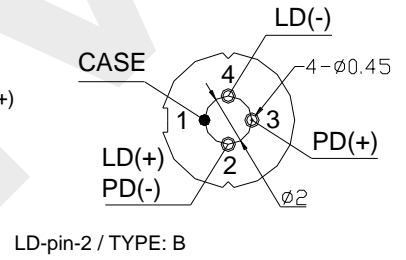
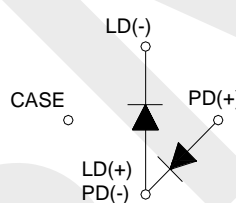
*Note7: Please designate the code of assembly direction.

Pin Assignment:

TYPE: 1



TYPE: 2



Nomenclature:

OSMF LP —5

A B C D E F G

| NO | Parameter | Detailed Description | | | | |
|----|----------------|----------------------|---|-----------------|---|---------------|
| A | Wavelength | 5=1550 | | | | |
| B | Data Rate | 1=1.25G | | 2=2.5G | | |
| C | Power | 05=0.2-0.6mW | | 10=0.61-1.5mW | | |
| D | Package Series | A | B | C | D | E |
| E | Connector | F=FC/PC | | S=SC/PC | | T=ST/PC |
| | | FA=FC/APC | | SA=SC/APC | | Blank=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 | | |

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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