# TECHNICAL SPECIFICATIONS

## 1310 nm 2.5Gbps High Power DFB Laser Diode Module

## LDP-2D1310-25 Series

**Revision Record**

| Document No. | Date of Issue | Description | Incorporated by | Checked by |
|---|---|---|---|---|
| LDP-2D1310-25 | 08/08/2006 | Initial Issue | R.T. | E.C. |
| LDP-2D1310-25 | 09/08/2006 | Add contact info and picture | R.T. | E.C. |

## Description

LDP-2D1310-25 Series are 1310 nm InGaAsP/InP MQW-DFB laser diode modules for use in un-cooled applications with data rate up to 2.5Gbps. The laser diode is mounted into a coaxial package integrated with an InGaAs monitor PD. They are available in either fiber pigtail with specified connectors or in a variety of receptacle types. The laser diode modules have low threshold current, high output power, and wide operating temperature range.

## Features

- Low threshold current
- High output power
- Un-cooled MQW DFB laser diode
- Wide operating temperature range
- Hermetically sealed active component
- Built-in InGaAs monitor photodiode
- Single frequency operation with high SMSR
- Available in either fiber pigtail with specified connectors or in a variety of receptacle types
- Supports intermediate and long reach transmission with data rate up to 2.5 Gbps

## Applications

- SONET/SDH OC-3/STM-1, OC-12/STM-4, OC-48/STM-16
- Gigabit Ethernet and Optical Data Link
- Subscriber Loops and CATV Applications

# Technical Specifications

### 1. Absolute maximum ratings

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Storage temperature | Tstg | -40~+85 | ℃ |
| Operating case temperature | Top | -40~+85 | ℃ |
| Storage relative humidity | RH | 85 | % |
| Fiber output power | Pf | 4 | mW |
| Forward current (LD) | IfL | 150 | mA |
| Reverse voltage (LD) | VrL | 2 | V |
| Reverse voltage (PD) | VrP | 20 | V |
| Forward current (PD) | IrP | 2 | mA |
| Soldering temperature (<10s) | Stemp | 260 | ℃ |

### 2. Electrical and optical characteristics (Tc=+25℃)

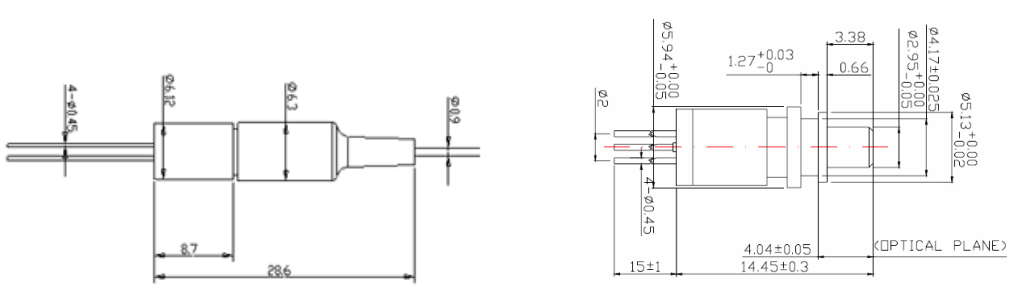
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Threshold current | Ith | CW | — | 7 | 15 | mA |
| | | CW, Tc=-40~+85℃ | — | — | 50 | |
| Optical output power | Pf | CW, If=Ith+20mA | 2.5 | — | — | mW |
| Operating voltage | Vf | CW, If=Ith+20mA | — | 1.1 | 1.5 | V |
| Slope efficiency | Se | CW, If=Ith+20mA | 0.12 | 0.15 | — | mW/mA |
| Central wavelength | λp | CW, If=Ith+20mA, Tc=-40~+85℃ | 1290 | 1310 | 1330 | nm |

| | | | | | | |
|---|---|---|---|---|---|---|
| Spectral width | Δλ | CW, If=Ith+20mA | — | — | 1 | nm |
| Side-mode suppression ratio | SSR | CW, If=Ith+20mA, Tc=-40~+85 ℃ | 30 | 40 | — | dB |
| Tracking error | ΔPf | CW, Im hold @pf=0.4mW, Tc=-40~+85 ℃ | -1.0 | — | 1.0 | dB |
| Rise time | tr | Ib=Ith, 20-80% | — | 80 | 120 | ps |
| Fall time | tf | Ib=Ith, 80-20% | — | 80 | 120 | ps |
| Monitor current | Im | CW, If=Ith+20mA | 50 | 300 | 2000 | μA |
| Monitor dark current | Id | Vrp=5V | — | — | 100 | nA |
| Monitor capacitance | C | Vrp=5V, f=1MHz | — | 10 | 20 | pF |
| Isolation | ISO | Package with single stage isolator | 30 | — | — | dB |

## 3. Fiber pigtail specification

| Parameter | Min | Typ. | Max. | Unit |
|---|---|---|---|---|
| Type | | Single Mode | | — |
| Mode field diameter@1310nm | 8.5 | 9.5 | 10.5 | μm |
| Cladding diameter | 122 | 125 | 128 | μm |
| Outer jacket diameter | 0.8 | 0.9 | 1.0 | mm |
| Bending radius | 30 | — | — | mm |

## 4. Package dimension

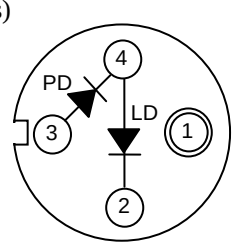



(Unit: mm)
Tolerance: ±0.1mm, unless otherwise noted.

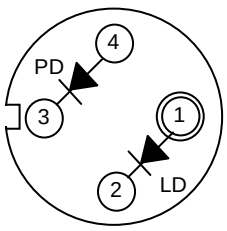
## 5. Pin assignment

| Pin No. | Type C | Type A |
|---|---|---|
| 1 | Case | LD Anode (Case) |
| 2 | LD Cathode | LD Cathode |
| 3 | PD Anode | PD Cathode |
| 4 | LD Anode/PD Cathode | PD Anode |

(Bottom Views)



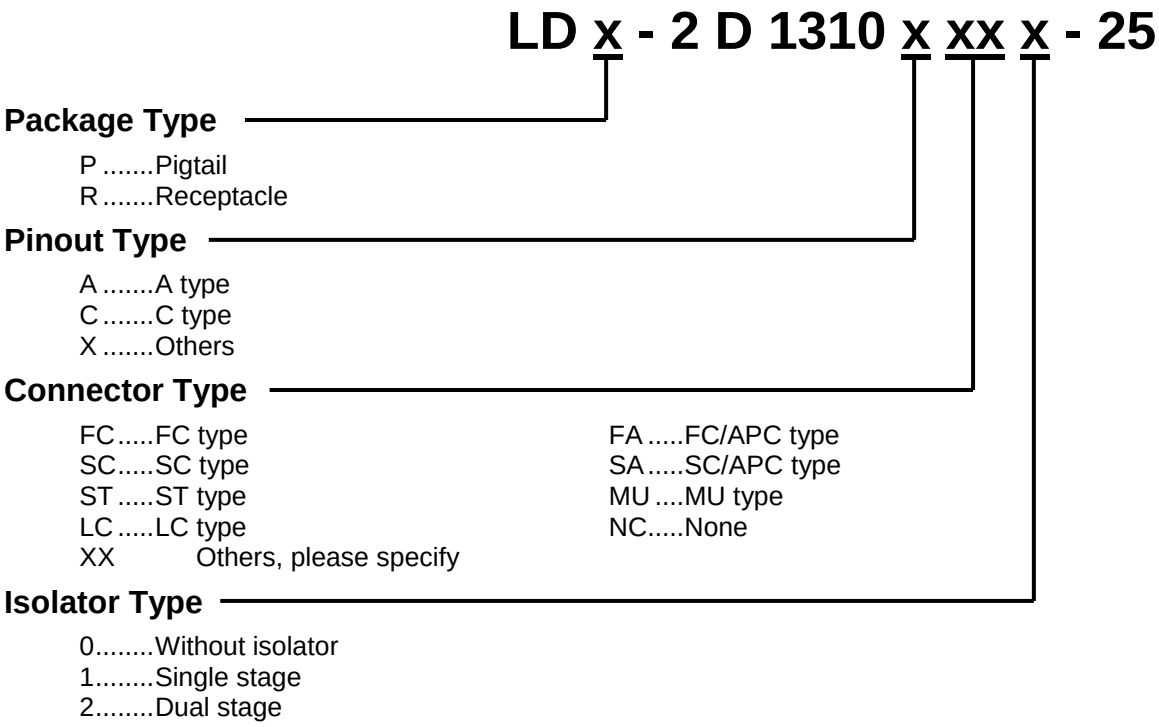

Type C




Type A

**6. Ordering information:**

## Example: LDP-2D1310CSC0-25

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