# OKI electronic components

# OL3112L

**1.3 μm DIP Laser Butterfly Module**

## GENERAL DESCRIPTION

The OL3112L is a 1.3 μm DFB laser in a 14-pin "butterfly" package. Having rated output power of 2 mW, this laser can be used in telecommunication applications and high speed WDM systems.

## FEATURES

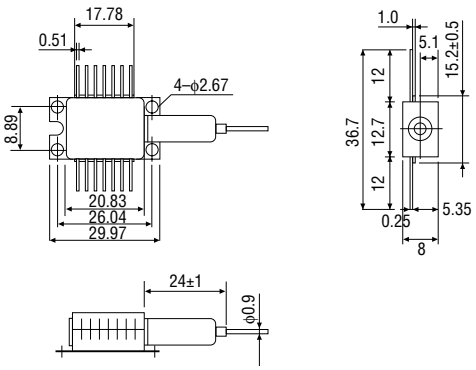
- Fiber output power: Pf=2 mW
- 14-pin "butterfly" package
- Built-in isolator
- Includes monitor photodiode for power control
- Built-in thermoelectric cooler

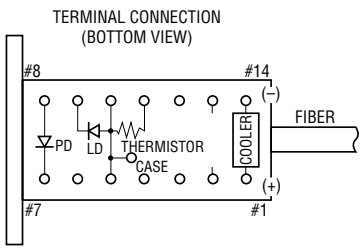
## APPLICATIONS

- Long-haul transmission systems
- CATV systems

## PACKAGE DIMENSIONS (Unit: mm)

- **OL3112L**




| PIN No. | FUNCTION | PIN No. | FUNCTION |
|---|---|---|---|
| 1 | COOLER ANODE | 8 | PD ANODE |
| 2 | NC | 9 | LD CATHODE |
| 3 | NC | 10 | LD ANODE, |
| 4 | NC | | THERMISTER and |
| 5 | LD ANODE and | | CASE GROUND |
| | CASE GROUND | 11 | THERMISTOR |
| 6 | NC | 12 | NC |
| 7 | PD CATHODE | 13 | NC |
| | | 14 | COOLER CATHODE |

## ABSOLUTE MAXIMUM RATINGS

(Unless otherwise noted)

| Parameter | Symbol | Test Conditions | Ratings | Unit |
|---|---|---|---|---|
| Fiber Output Power | Pf | Ta=25°C | 3 | mW |
| LD Forward Current | $I_F$ (LD) | | 150 | mA |
| LD Reverse Voltage | $V_R$ (LD) | | 2 | V |
| PD Reverse Voltage | $V_R$ (PD) | | 20 | V |
| PD Forward Current | $I_F$ (PD) | | 10 | mA |
| Cooler Current | Ic | | 1.2 | A |
| Operating Temperature | $T_{opr}$ | — | –20 to +65 | °C |
| Storage Temperature | $T_{stg}$ | — | –40 to +70 | °C |

## OPTICAL AND ELECTRICAL CHARACTERISTICS

( $T_{LD}$=25°C)

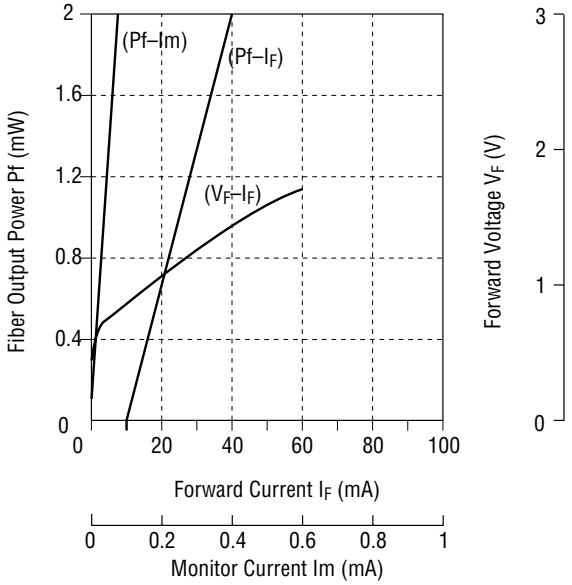
| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Threshold Current | Ith | — | — | 15 | 30 | mA |
| Fiber Output Power | Pf | $I_F$=Ith+40 mA | 2 | — | — | mW |
| Peak Wavelength | λp | Pf=2 mA | 1280 | 1310 | 1340 | nm |
| Spectral Width | Δλ | Pf=2 mW, –20dB | — | — | 1 | nm |
| Side Mode Suppression Ratio | SMSR | Pf=2 mW | 30 | — | — | dB |
| Forward Voltage | $V_F$ | $I_F$=30 mA | — | — | 1.5 | V |
| Rise Time | $t_r$ | Ibias=Ith | — | — | 0.3 | ns |
| Fall Tine | $t_f$ | Pf (ave.)=1 mW, 10 to 90% | — | — | 0.3 | ns |
| PD Dark Current | $I_{DARK}$ | $V_R$ (PD) =5 V | — | — | 1 | μA |
| Monitor Current | Im | Pf=2 mW, $V_R$ (PD) =5 V | 20 | 50 | — | μA |
| Cooler Capacity | ΔT | Pf=2 mW | 40 | — | — | °C |
| Cooler Current | Ic | ΔT=40°C, Pf=2mW | — | — | 1.0 | A |
| Cooler Voltage | Vc | ΔT=40°C, Pf=2mW | — | — | 3 | V |
| Thermistor Resistance | Rth | — | — | 10 | — | kΩ |

## FIBER PIGTAIL SPECIFICATIONS

| Parameter | Specifications | Unit |
|---|---|---|
| Fiber Type | Single-mode | — |
| Mode Field Diameter | 10±1 | μm |
| Cladding Diameter | 125±2 | μm |
| Jacket Diameter | 900 | μm |
| Length | 1 (Min) | m |
| Connector | FC | — |

## TYPICAL CHARACTERISTICS

**Fiber Output Power vs. Forward Current**




**Spectrum**