

1310 nm LASER DIODES
UNCOOLED MQW-FP LASER DIODES

FL-3100 SERIES

FEATURES

- 2 1310 nm typical emission wavelength
- 2 High reliability, long operation life
- 2 -40 °C ~+85 °C operation without active cooling
- 2 Up to 2.5 Gb/s Operation
- 2 Build-in InGaAs monitor
- 2 Complies with Bellcore TA-NWT-000983
- 2 Flat Window Cap Package (FL-310XX)
- 2 Ball Lens Cap Package (FL-311XX)
- 2 Aspherical Lens Cap Package (FL-312XX)

APPLICATION

Optical communication system

DESCRIPTION

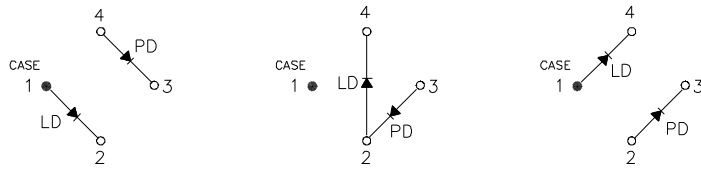
FL-3100 series are MQW-FP laser diodes that provide a durable, single transverse mode oscillation with emission wavelength of 1310 nm. FL-3100 series are hermetically sealed devices with the build-in photodiode for output monitoring.

| ELECTRICAL AND OPTICAL CHARACTERISTICS (Tc=25°C, Pop=5mW, unless otherwise specified) | | | | | | |
|--|--|--|---------------------|--------------------|------------|-------|
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
| I _{th} | Threshold Current | CW | | 12 | 15 | mA |
| V _{OP} | Operating Voltage | CW, Pop=5mW | | 1.2 | 1.5 | V |
| η | Slope Efficiency Part No.: FL-310XX FL-311XX FL-312XX | CW, Pop=5mW | 0.3 0.25 0.25 | 0.4 0.3 0.35 | | mW/mA |
| λ _c | Center Wavelength | CW, Pop=5mW | 1290 | 1310 | 1330 | nm |
| Δλ | Spectral Width | CW, RMS (σ), Pop=5mW | | 1 | 3 | nm |
| θ _∥ | Beam Divergence (Parallel) | CW, Flat Window | | 20 | | deg. |
| θ _⊥ | Beam Divergence (Perpendicular) | CW, Flat Window | | 35 | | deg. |
| t _r , t _f | Rise And Fall Times Part No.: FL-311XX FL-311XXS | I _F =I _{th} , 20~ 80%, Pop=5mW | | | 226 150 | ps |
| I _m | PD Monitor Current | CW, V _{RD} =1V, Pop=5mW | 100 | | 1000 | μA |
| I _D | PD Dark Current | V _{RD} =5V | | | 0.1 | μA |
| C _t | PD Capacitance | V _{RD} =5V, f=1MHz | | 10 | 15 | pF |
| P _f | Fiber Coupled Power Part No.: FL-311XX FL-312XX | CW, SM fiber, Pop=5mW | 0.4 1.5 | | | mW |

| ABSOLUTE MAXIMUM RATINGS (T _C =25 °C) | | | |
|--|-----------------------|---------|------|
| Symbol | Parameter | Ratings | Unit |
| P _o | Optical Output Power | 10 / *7 | mW |
| V _{RL} | LD Reverse Voltage | 2 | V |
| V _{RD} | PD Reverse Voltage | 15 | V |
| I _{FD} | PD Forward Current | 2 | mA |
| T _{opr} | Operating Temperature | -40~+85 | °C |
| T _{stg} | Storage Temperature | -40~+85 | °C |

Remark: * applied for ball-lens type only

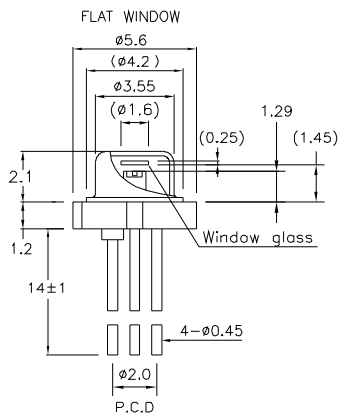
MECHANICAL DIMENSION (mm) and PIN ASSIGNMENT



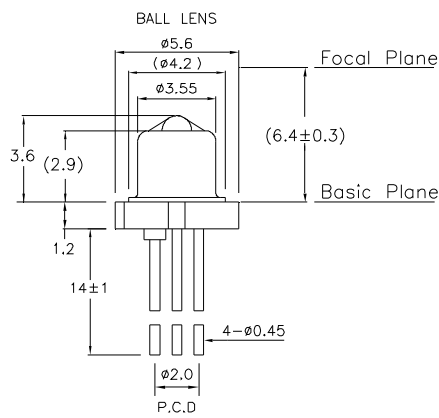
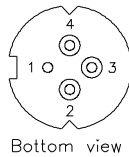
Type A

Type B

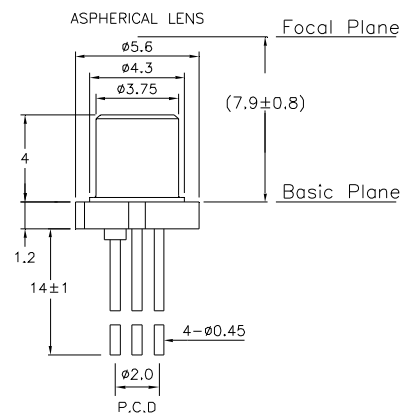
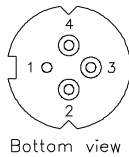
Type C



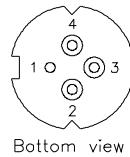
FL-310XX



FL-311XX



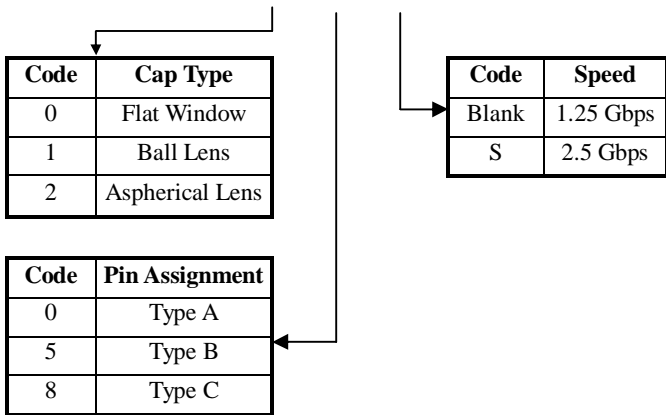
FL-312XX



Note: Specifications subject to change without notice.

ORDER INFORMATION

Part No.: F L - 3 1



Revision History

| Version | Subject | Release Date |
|---------|--|--------------|
| 1.0 | Initial datasheet | 2002/8/1 |
| 2.0 | Combine 1.25G and 2.5G characteristics in one data sheet | 2007/12/1 |
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