

**1490 nm DFB LASER DIODES**  
MQW-DFB LASER DIODES

**DL-5100-1490 Series**

**FEATURES**

- 2 Uncooled Laser Diode with MQW Structure
- 2 High Reliability, Long Operation Life
- 2 5 mW CW Operation at 0 °C ~ +70 °C
- 2 Single Frequency Operation with High SMSR
- 2 Up to 2.5 Gb/s Operation
- 2 Build-in InGaAs Monitor
- 2 Flat Window Cap Package (DL-510XX-1490)
- 2 Aspherical Lens Cap Package (DL-512XX-1490)
- 2 2 mm Ball Lens Cap Package (DL-514XX-1490)

**APPLICATION**

Optical communication system

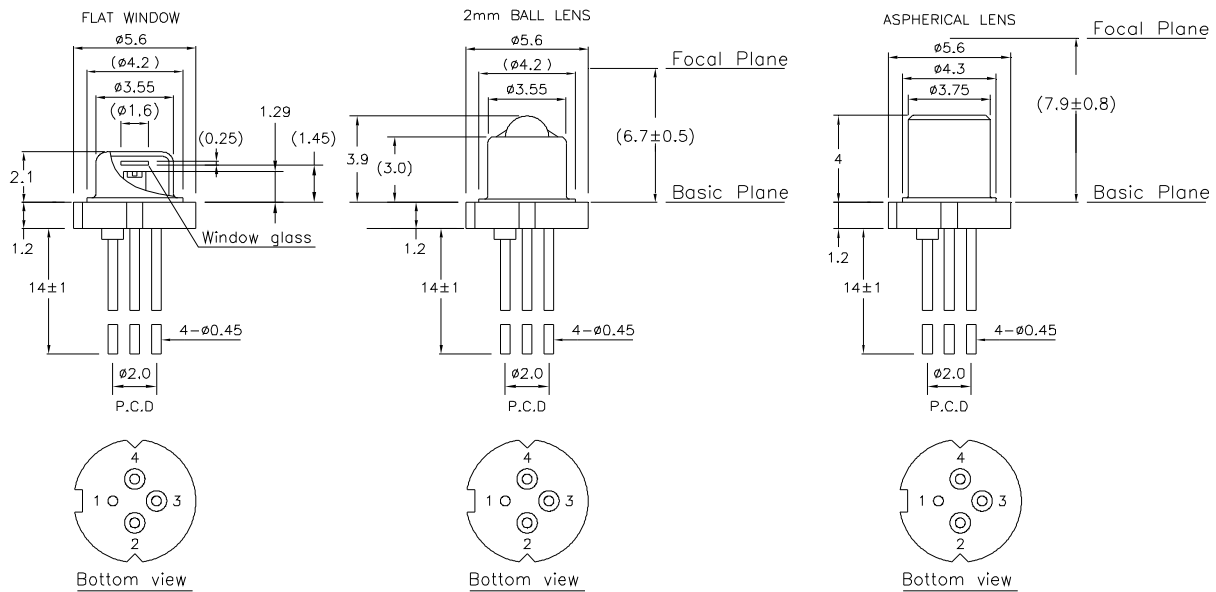
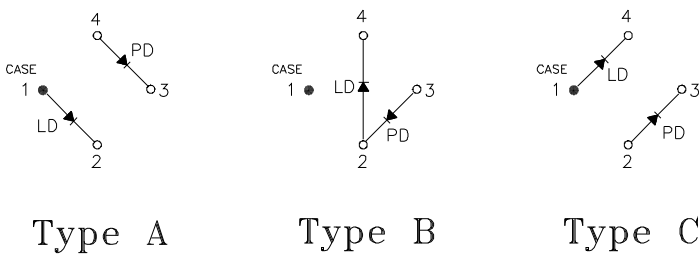
**DESCRIPTION**

DL-5100-1490 series are MQW-DFB laser diodes that provide a durable, single frequency oscillation with emission wavelength of 1490 nm. DL-5100-1490 series are hermetically sealed devices with the build-in photodiode for output monitoring.

<b>ELECTRICAL AND OPTICAL CHARACTERISTICS (Tc=25°C, Pop=5mW, unless otherwise specified)</b>						
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>th</sub>	Threshold Current	CW		10	15	mA
V <sub>OP</sub>	Operating Voltage	CW, Pop=5mW		1.2	1.5	V
η	Slope Efficiency Part No:DL-510XX-1490 DL-512XX-1490 DL-514XX-1490	CW, Pop=5mW	0.20 0.18 0.15	0.25 0.22 0.22		mW/mA
λ <sub>c</sub>	Center Wavelength	CW, Pop=5mW	1483	1490	1495	nm
SMSR	Side Mode Suppression Ratio	CW, Pop=5mW	30	35		dB
θ <sub>  </sub>	Beam Divergence (Parallel)	CW, Flat Window		25		deg.
θ <sub>⊥</sub>	Beam Divergence (Perpendicular)	CW, Flat Window		35		deg.
t <sub>r</sub> , t <sub>f</sub>	Rise And Fall Times Part No: :DL-51XX-1490 DL-51XXS-1490	I <sub>F</sub> =I <sub>th</sub> , 20~ 80%, Pop=5mW			226 150	ps
I <sub>m</sub>	PD Monitor Current	CW, V <sub>RD</sub> =1V, Pop=5mW	50		1500	μA
I <sub>D</sub>	PD Dark Current	V <sub>RD</sub> =5V			0.1	μA
C <sub>t</sub>	PD Capacitance	V <sub>RD</sub> =5V, f=1MHz		10	15	pF
P <sub>f</sub>	Fiber Coupled Power Part No:DL-512XX-1490 DL-514XX-1490	CW, SM fiber, Pop=5mW	1.5 0.5			mW

ABSOLUTE MAXIMUM RATINGS (T <sub>C</sub> =25 °C)			
Symbol	Parameter	Ratings	Unit
P <sub>o</sub>	Optical Output Power	6	mW
V <sub>RL</sub>	LD Reverse Voltage	2	V
V <sub>RD</sub>	PD Reverse Voltage	15	V
I <sub>FD</sub>	PD Forward Current	2	mA
T <sub>opr</sub>	Operating Temperature	0~70	°C
T <sub>stg</sub>	Storage Temperature	-40 ~ +85	°C

## MECHANICAL DIMENSION (mm) and PIN ASSIGNMENT



**Note:** Specifications subject to change without notice.

ORDER INFORMATION

Part No.: D L - 5 1    - 1 4 9 0

Code	Cap Type
0	Flat Window
2	Aspherical Lens
4	2mm Ball Lens

Code	Speed
Blank	1.25 Gbps
S	2.5 Gbps

Code	Pin Assignment
0	Type A
5	Type B
8	Type C

Revision History

Version	Subject	Release Date
1.0	Initial datasheet	2003/10/1
2.0	Combine 1.25G and 2.5G characteristics in one data sheet	2007/12/1