1550 nm DFB LASER DIODES DL-5100 SERIES

MQW-DFB LASER DIODES

FEATURES

- 1550 nm Uncooled Laser Diode with Al-free MQW Structure
- High Reliability, Long Operation Life
- 5 mW CW Operation at 0 ºC ~ +70 ºC
- Single Frequency Operation with High SMSR
- Up to 2.5 Gb/s Operation
- Build-in InGaAs Monitor
- Flat Window Cap Package (DL-510XX)
- Aspherical Lens Cap Package (DL-512XX)
- 2 mm Ball Lens Cap Package (DL-514XX)

APPLICATION

communication system

DESCRIPTION

DL-5100 series are MQW-DFB laser diodes that provide a durable, single frequency oscillation with emission wavelength of 1550 nm. DL-5100 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		10	15	mA
V_{OP}	Operating Voltage	CW, Pop=5mW		1.2	1.5	V
η	Slope Efficiency Part No:DL-510XX DL-512XX DL-514XX	CW, Pop=5mW	 0.20 0.18 0.15	 0.25 0.22 0.22		mW/mA
λ c	Center Wavelength	CW, Pop=5mW	1530	1550	1570	nm
SMSR	Side Mode Suppression Ratio	CW, Pop=5mW	30	35		dB
θ //	Beam Divergence (Parallel)	CW, Flat Window		25		deg.
$\theta \perp$	Beam Divergence (Perpendicular)	CW, Flat Window		35		deg.
t_r, t_f	Rise And Fall Times Part No:DL-51XX DL-51XXS	$I_F=I_{th}$, 20~ 80%, Pop=5mW			 226 150	ps
I_m	PD Monitor Current	CW, V_{RD}=1V, Pop=5mW	50		1500	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:DL-512XX DL-514XX	CW, SM fiber, Pop=5mW	 1.5 0.5			mW

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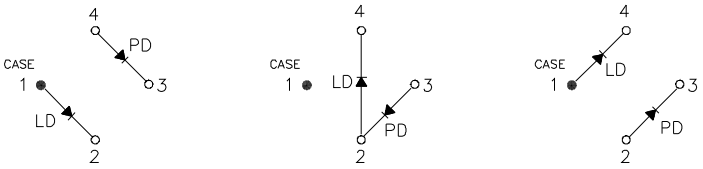
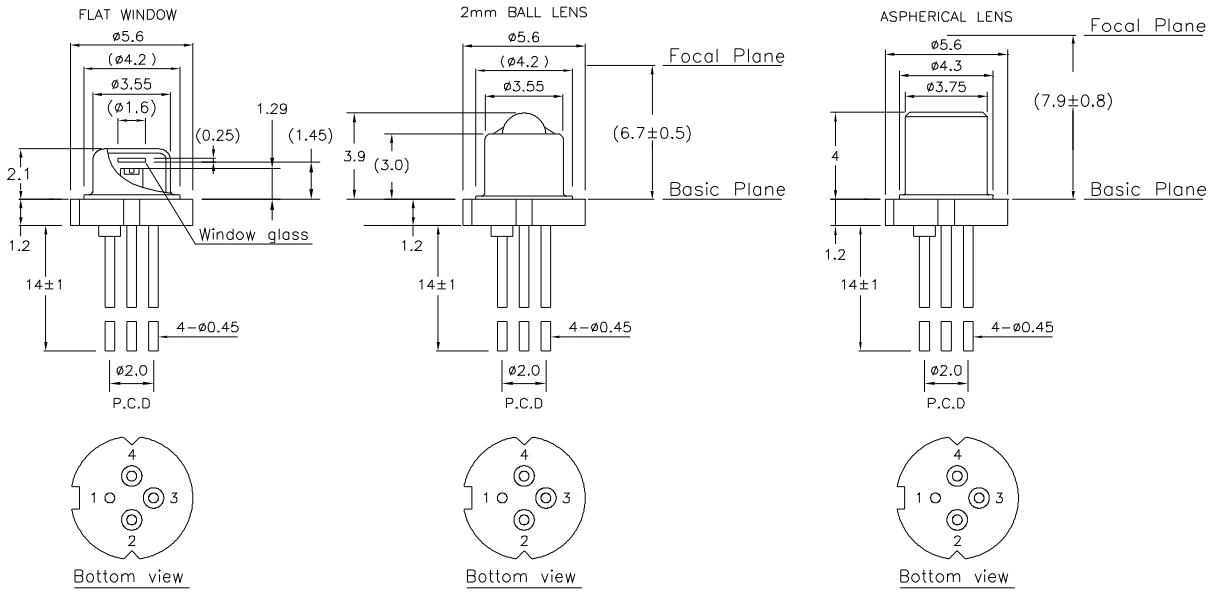
ABSOLUTE MAXIMUM RATINGS (T_C=25 ºC)			
Symbol	**Parameter**	**Ratings**	**Unit**
Po	Optical Output Power	6	mW
V_{RL}	LD Reverse Voltage	2	V
V_{RD}	PD Reverse Voltage	15	V
I_{FD}	PD Forward Current	2	mA
T_{opr}	Operating Temperature	0~70	ºC
T_{stg}	Storage Temperature	-40 ~ +85	ºC

MECHANICAL DIMENSION (mm) and PIN ASSIGNMENT



Type A Type B Type C



DL-510XX **DL-514XX** **DL-512XX**

Note: Specifications subject to change without notice.

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ORDER INFORMATION

Part No.: D L - 5 1 □ □ □

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