HL6501MG

Visible High Power Laser Diode

ODE2031-00 (M)
Rev.0
Aug. 01, 2008

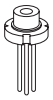
Description

The HL6501MG is a 0.65 μm band AlGaInP laser diode (LD) with a multi-quantum well (MQW) structure. It is suitable as a light source for large capacity optical disc memories and various other types of optical equipment. Hermetic sealing of the small package (ϕ5.6 mm) assures high reliability.

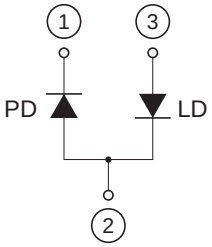
Features

- High output power: 35 mW (CW)
- Visible light output: λp = 658 nm Typ
- Small package: ϕ 5.6 mm
- Low astigmatism: 6 μm Typ (P_O = 5 mW)
- Single longitudinal mode

Package Type
• HL6501MG: MG



Internal Circuit



Absolute Maximum Ratings

(T_C = 25°C)

Item	Symbol	Ratings	Unit
Optical output power	P_O	35	mW
Pulse optical output power	$P_{O(pulse)}$	50 *	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	Topr	–10 to +60	°C
Storage temperature	Tstg	–40 to +85	°C

Note: Pulse condition : Pulse width = 100 ns , duty = 50%

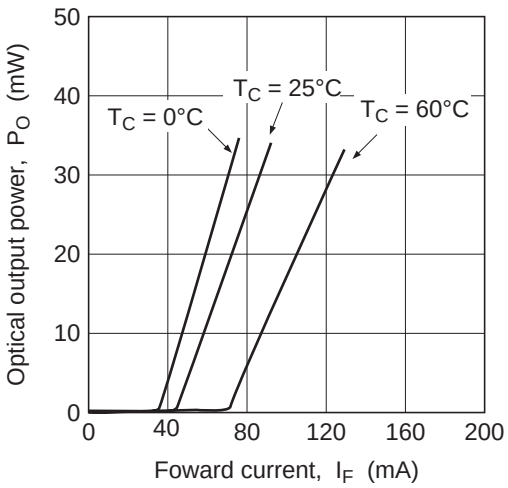
Optical and Electrical Characteristics

(T_C = 25°C)

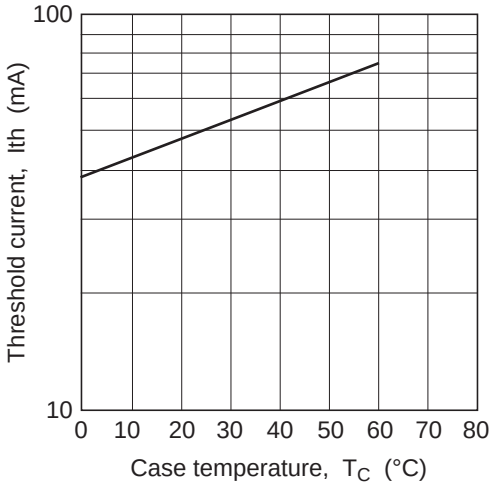
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	Ith	30	45	70	mA	—
Operating voltage	V_{OP}	2.1	2.6	3.0	V	P_O = 30 mW
Slope efficiency	ηs	0.5	0.75	1.0	mW/mA	18 (mW) / ($I_{(24mW)}$ – $I_{(6mW)}$)
Beam divergence parallel to the junction	θ//	7	8.5	10.5	°	P_O = 30 mW
Beam divergence perpendicular to the junction	θ⊥	18	22	26	°	P_O = 30 mW
Astigmatism	A_S	—	6	—	μm	P_O = 5 mW, NA = 0.55
Lasing wavelength	λp	645	658	665	nm	P_O = 30 mW
Monitor current	I_S	0.05	0.2	1.5	mA	P_O = 30 mW, $V_{R(PD)}$ = 5 V

Typical Characteristic Curves

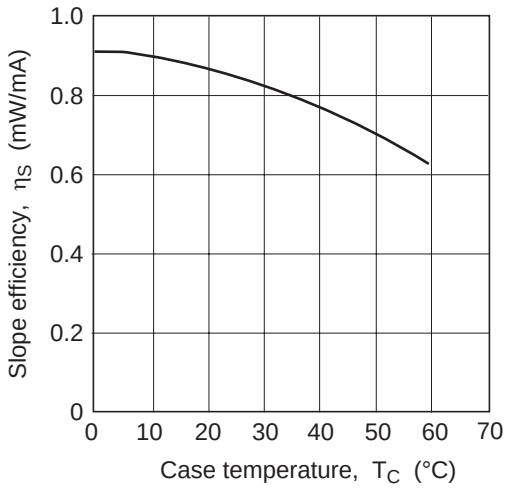
Optical Output Power vs. Forward Current



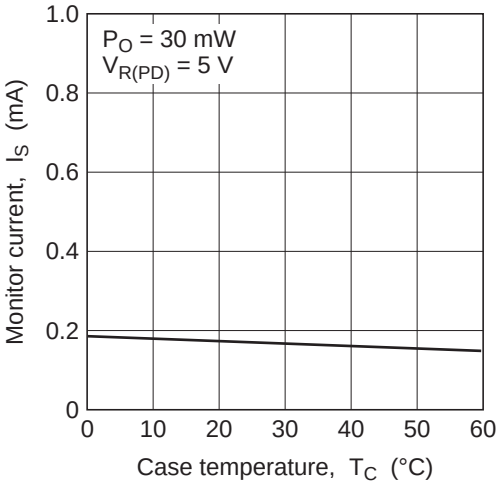
Threshold Current vs. Case Temperature



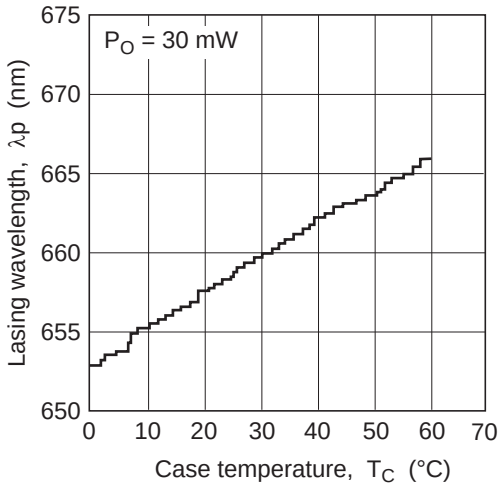
Slope Efficiency vs. Case Temperature



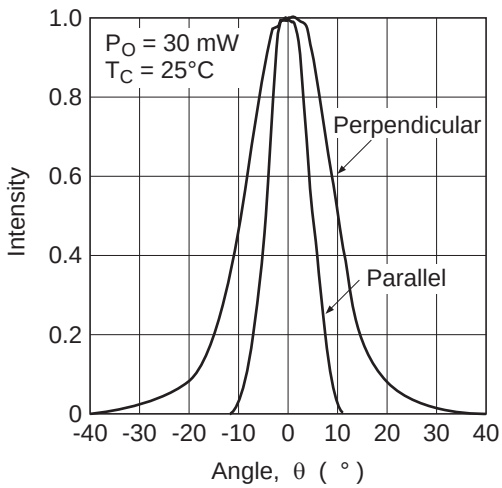
Monitor Current vs. Case Temperature



Lasing Wavelength vs. Case Temperature



Far Feild Pattern



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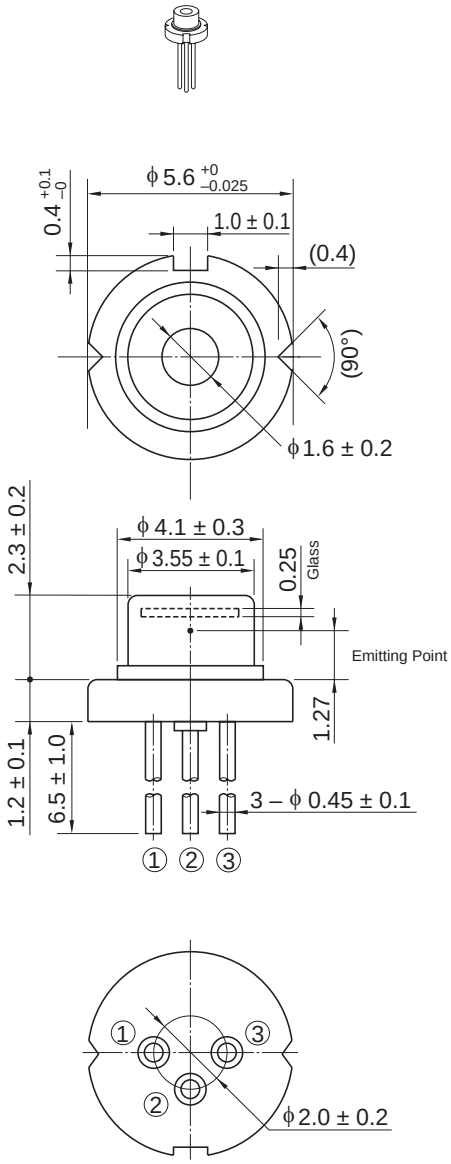
Package Dimensions

As of July, 2002

Unit: mm



OPJ Code	LD/MG
JEDEC	—
JEITA	—
Mass (reference value)	0.3 g

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