
HL6501MG

Visible High Power Laser Diode for DVD-RAM

HITACHI

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, such as DVD-RAM, and various other types of optical equipment.

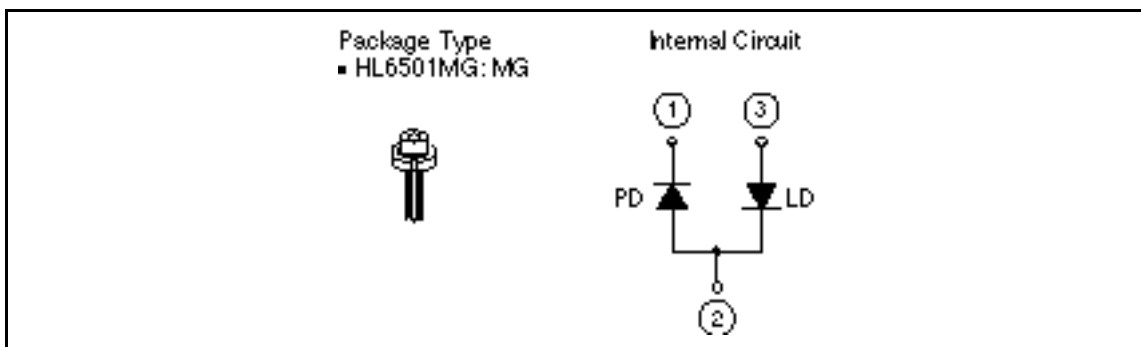
Hermetic sealing of the small package (5.6 mm) assures high reliability.

Application

- Optical disc memories
- Optical equipment

Features

- High output power: 35 mW (CW)
- Visible light output: $\lambda = 658 \text{ nm}$ Typ
- Small package: 5.6 mm
- Low astigmatism: 6 μm Typ ($P_o = 5 \text{ mW}$)



Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Item	Symbol	Value	Unit
Optical output power	P_O	35	mW
Pulse optical output power	P_O (pulse)	50 *	mW
Laser diode reverse voltage	$V_{R(LD)}$	2	V
Photo diode reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{opr}	-10 to +60	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

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

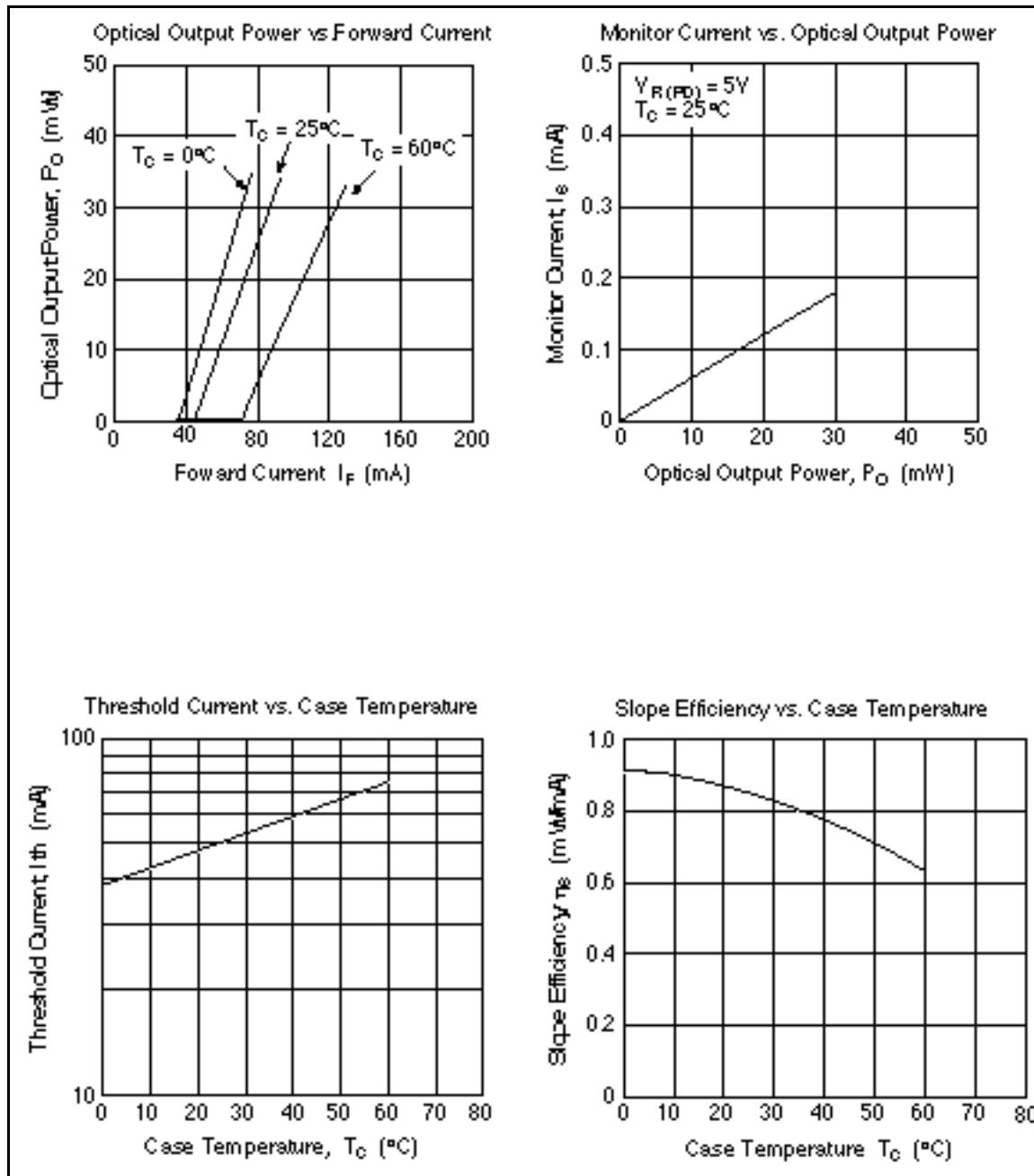
Optical and Electrical Characteristics ($T_C = 25^\circ\text{C}$)

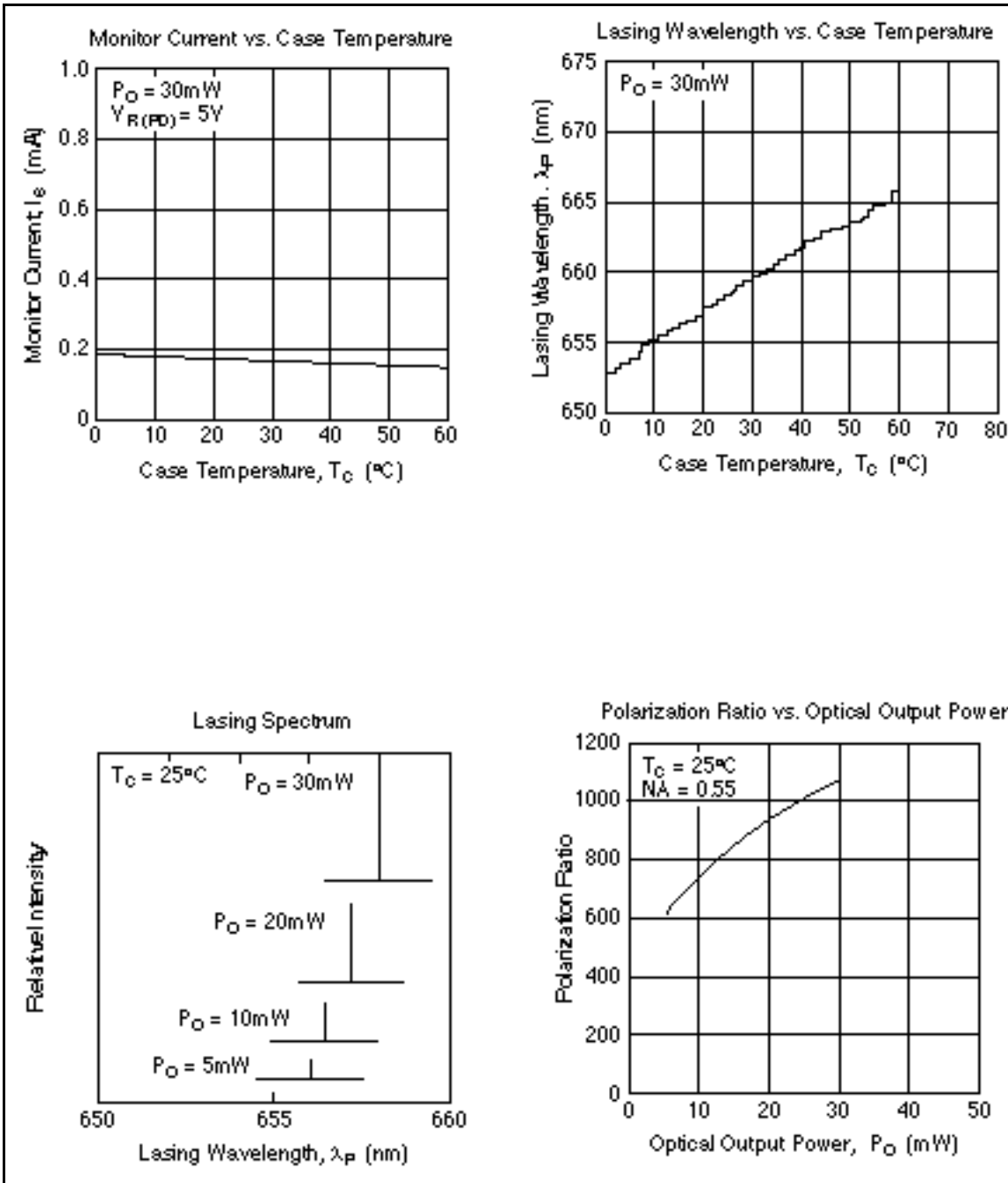
Items	Symbols	Min	Typ	Max	Units	Test Conditions
Optical output power	P_O	35	—	—	mW	Kink free *
Pulse optical output power	$P_{O(\text{pulse})}$	50	—	—	mW	Kink free *
Threshold current	I_{th}	30	45	70	mA	—
Operating voltage	V_{OP}	2.1	2.6	3.0	V	$P_O = 30 \text{ mW}$
Slope efficiency	s	0.5	0.75	1.0	mW/mA	$18(\text{mW}) / (I_{(24\text{mW})} - I_{(6\text{mW})})$
Lasing wavelength	p	645	658	665	nm	$P_O = 30 \text{ mW}$
Beam divergence parallel to the junction	//	7	8.5	10.5	deg.	$P_O = 30 \text{ mW}$
Beam divergence perpendicular to the junction		18	22	26	deg.	$P_O = 30 \text{ mW}$
Monitor current	I_s	0.05	0.3	1.5	mA	$P_O = 30 \text{ mW}$, $V_{R(PD)} = 5 \text{ V}$
Asigmatism	A_s	—	6	—	μm	$P_O = 5 \text{ mW}$, $NA = 0.55$

Note: Kink free is confirmed at the temperature of 25°C

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Curve Characteristics





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