

HL6738MG

Visible High Power Laser Diode

HITACHI

ADE-208-601C (Z)
4th Edition
Dec. 2000

Description

The HL6738MG is a 0.68 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 (ϕ 5.6 mm) assures high reliability.

Application

- Optical disc memories
- Optical equipment

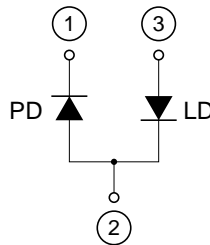
Features

- High output power : 35 mW (CW)
- Visible light output : $\lambda_p = 680$ to 695 nm
- Small package : ϕ 5.6 mm
- Low astigmatism : 6 μm Typ ($P_o = 5$ mW)

Package Type
• HL6738MG: MG



Internal Circuit



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

Item	Symbol	Value	Unit
Optical output power	P_O	35	mW
Pulse optical output power	$P_{O(\text{pulse})}$	50 *	mW
Laser diode reverse voltage	$V_{R(\text{LD})}$	2	V
Photo diode reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	T_{opr}	-10 to +70	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

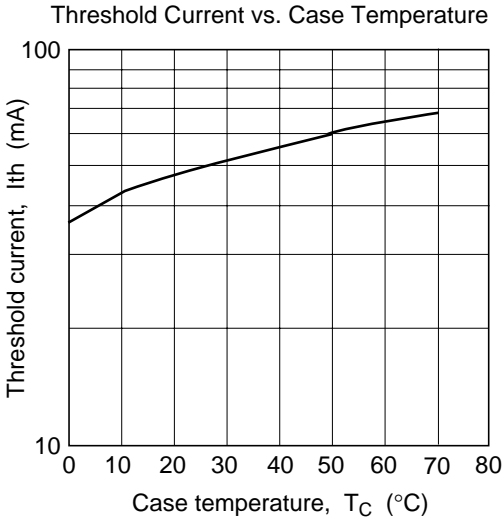
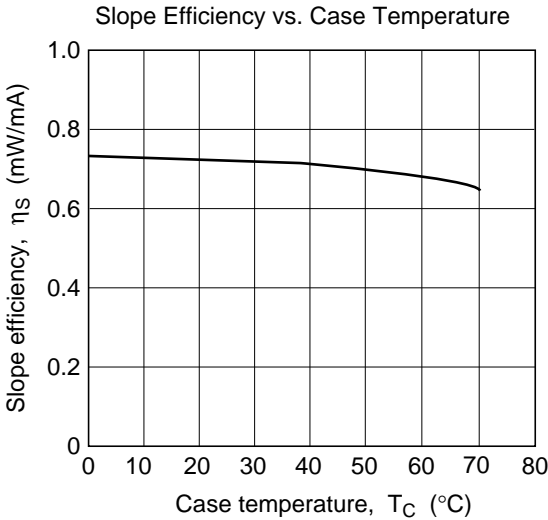
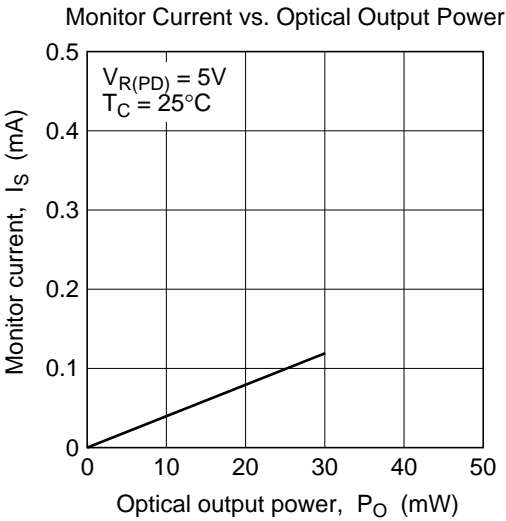
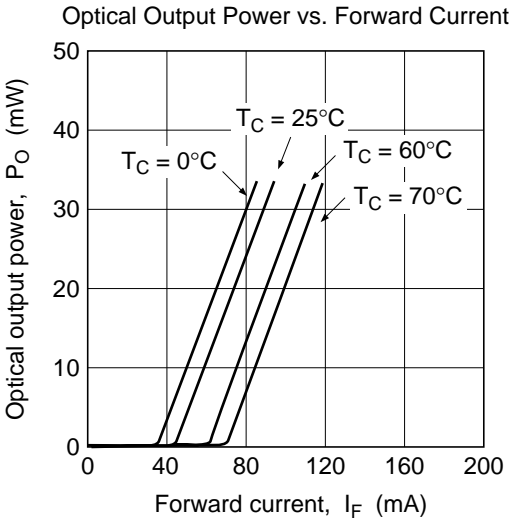
Note: Pulse condition : Pulse width = 100 ns, duty = 50%

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

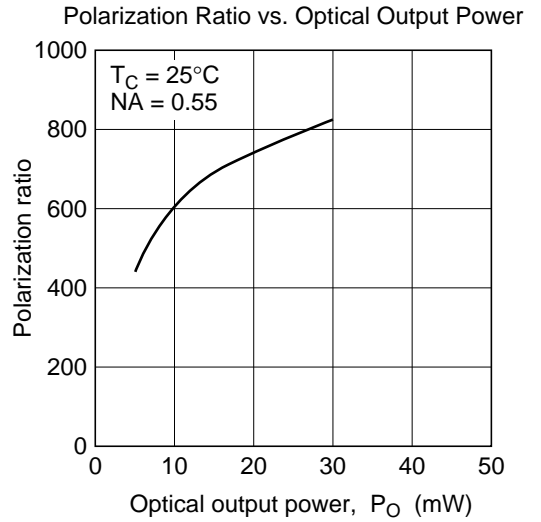
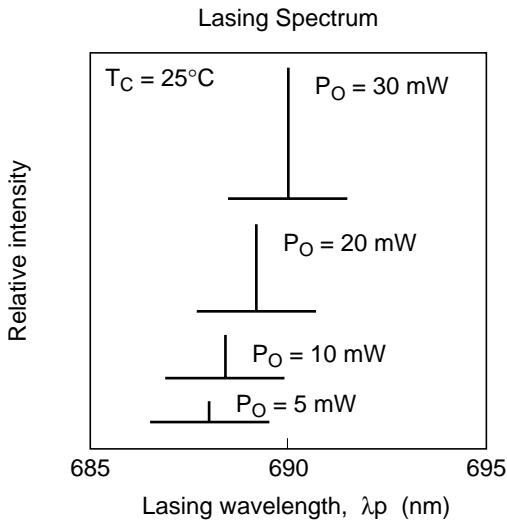
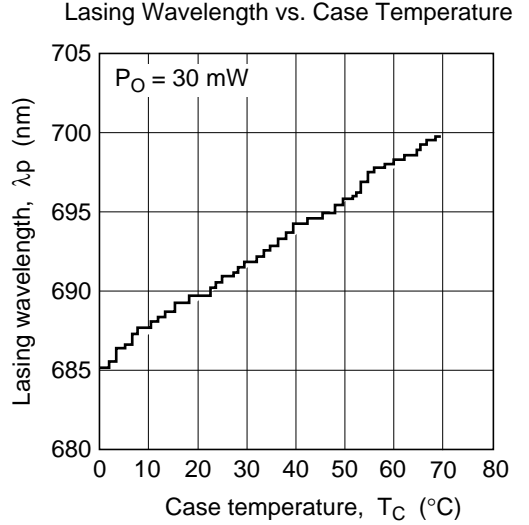
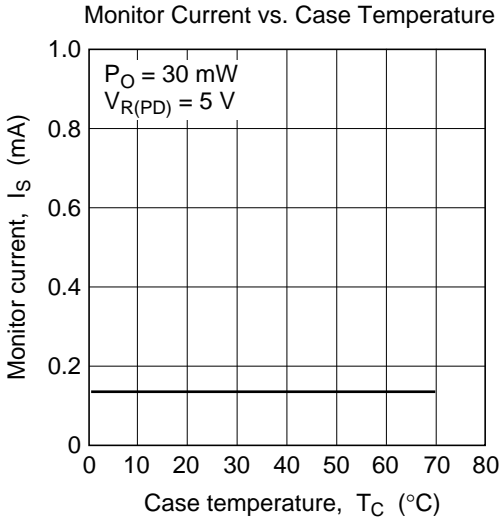
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	35	—	—	mW	Kink free *
Pulse optical output power	$P_{O(\text{pulse})}$	50	—	—	mW	Kink free *
Threshold current	I_{th}	30	45	70	mA	—
Operating voltage	V_{OP}	2.1	2.5	2.8	V	$P_O = 30 \text{ mW}$
Slope efficiency	η_s	0.5	0.7	0.9	mW/mA	$18(\text{mW}) / (I_{(24\text{mW})} - I_{(6\text{mW})})$
Beam divergence parallel to the junction	$\theta_{//}$	7	8.5	10.5	deg.	$P_O = 30 \text{ mW}$
Beam divergence perpendicular to the junction	θ_{\perp}	17	19	23	deg.	$P_O = 30 \text{ mW}$
Asigmatism	A_s	—	6	—	μm	$P_O = 5 \text{ mW}$, $NA = 0.55$
Lasing wavelength	λ_p	680	690	695	nm	$P_O = 30 \text{ mW}$
Monitor current	I_s	0.02	0.1	0.45	mA	$P_O = 30 \text{ mW}$, $V_{R(\text{PD})} = 5 \text{ V}$

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

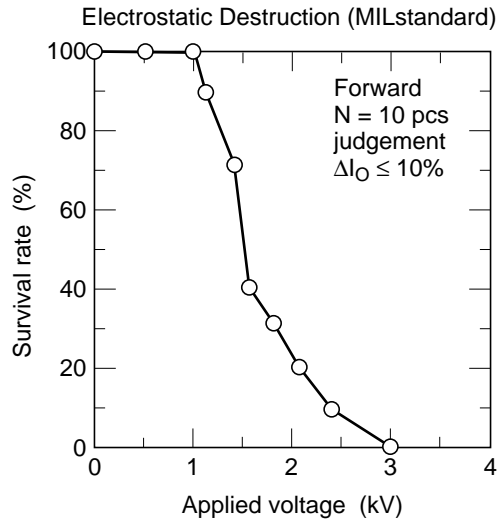
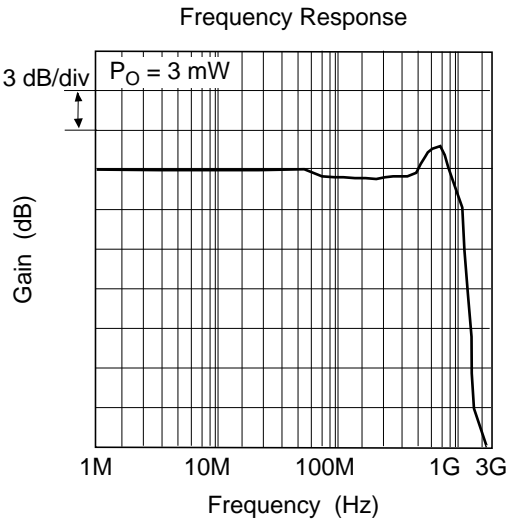
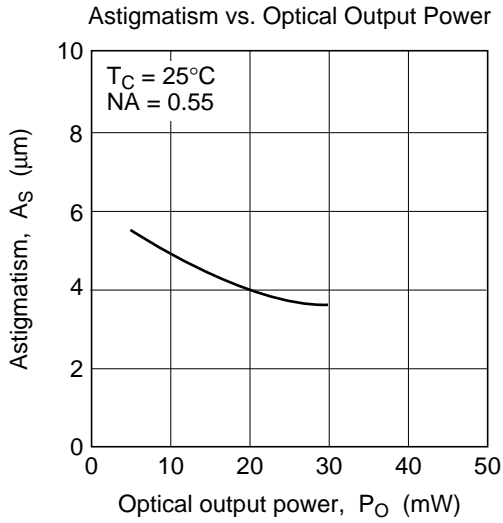
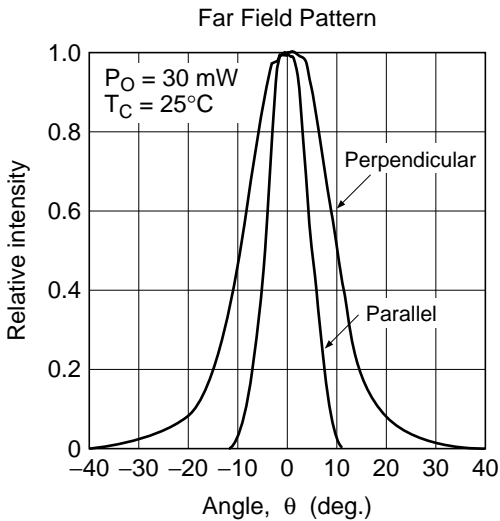
Typical Characteristic Curves



Typical Characteristic Curves (cont)

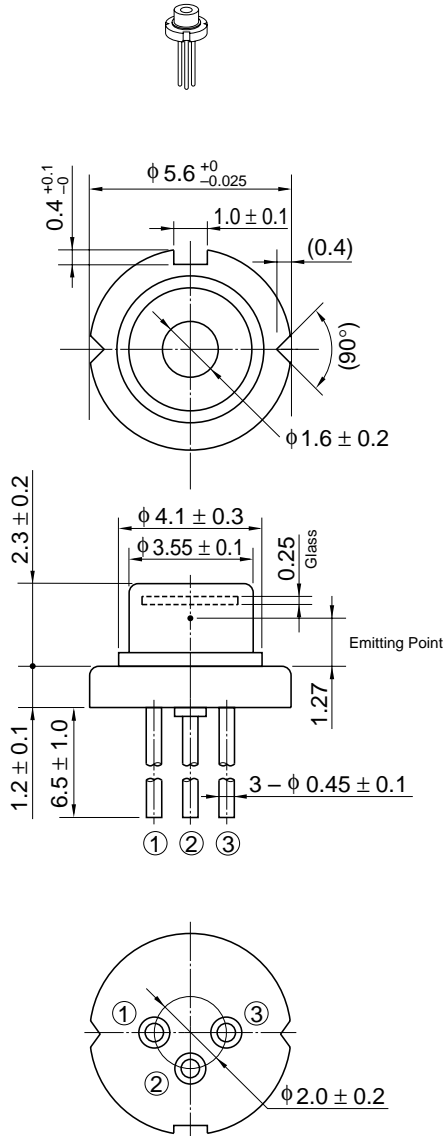


Typical Characteristic Curves (cont)



Package Dimensions

Unit: mm



Hitachi Code	LD/MG
JEDEC	—
EIAJ	—
Mass (reference value)	0.3 g

Cautions

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1. The laser light is harmful to human body especially to eye no matter what directly or indirectly. The laser beam shall be observed or adjusted through infrared camera or equivalent.

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