

HL6339G/42G

633nm Lasing Laser Diode

HITACHI

ADE-208-1434A (Z)

Rev.1
Apr. 2002

Description

The HL6339G/42G is 0.63 μm band AlGaInP laser diode with a multi-quantum well (MQW) structure. Lasing wavelength of this laser is nearly equal to the wavelength of He-Ne gas laser. They are suitable as light sources for laser levelers, laser scanners and optical equipment for measurement.

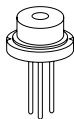
Application

- Measurement
- Laser analysis systems
- Laser scanner

Features

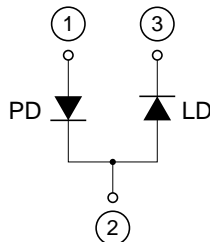
- Optical output power : 5 mW (CW)
- Visible light output : 633 nm Typ (nearly equal to He-Ne gas laser)
- Low operating current : 55 mA Typ
- Low operating voltage : 2.3 V Typ
- TM mode oscillation

Package Type
• HL6339G/42G: G2



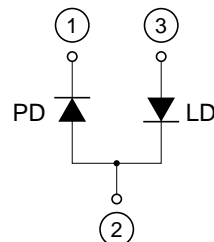
Internal Circuit

• HL6339G



Internal Circuit

• HL6342G



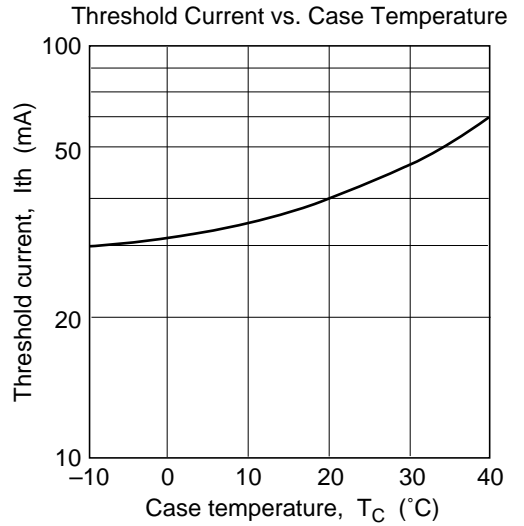
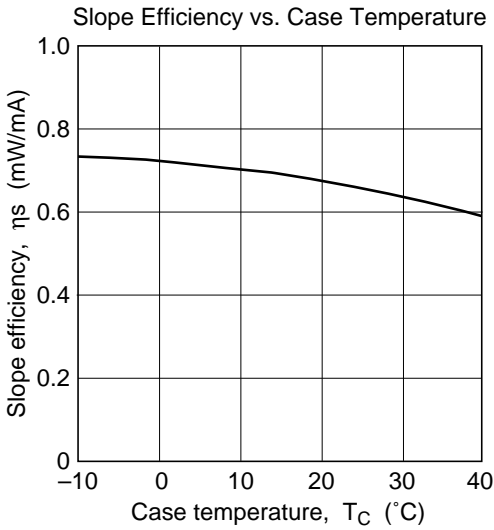
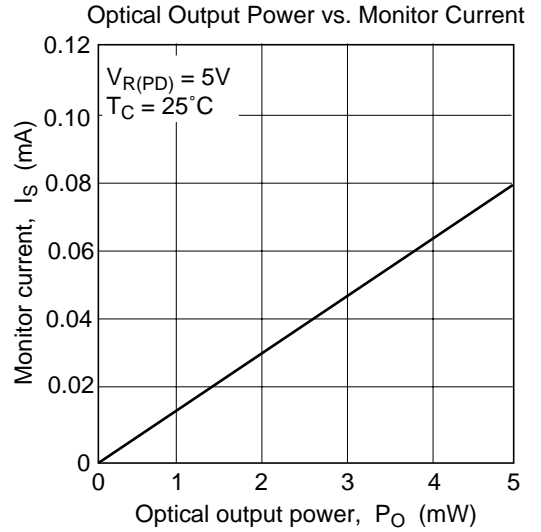
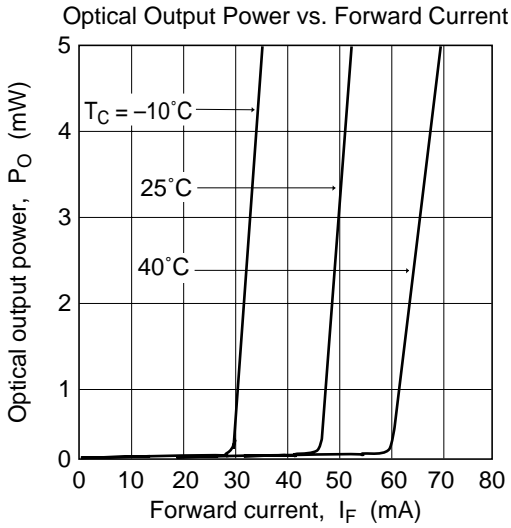
Absolute Maximum Ratings $(T_c = 25^\circ\text{C})$

Item	Symbol	Value	Unit
Optical output power	P_o	5	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{opr}	-10 to +40	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

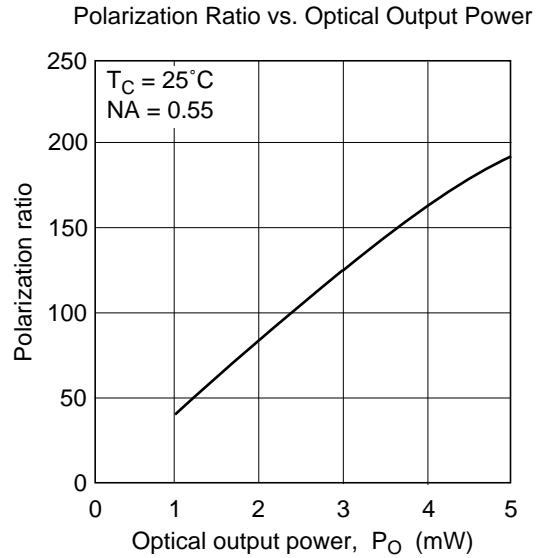
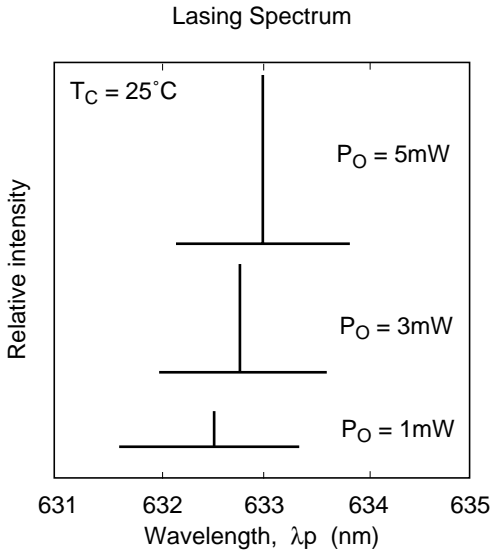
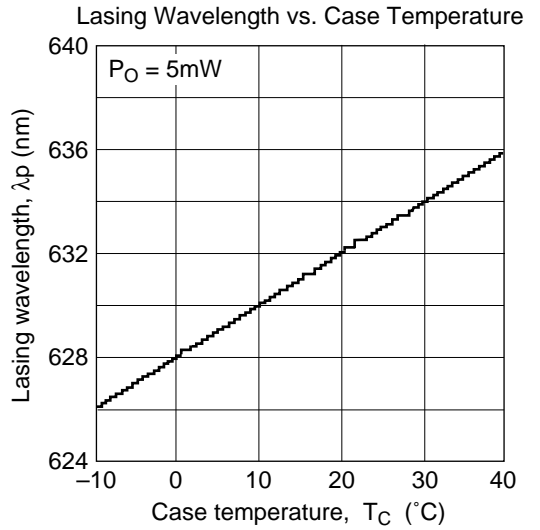
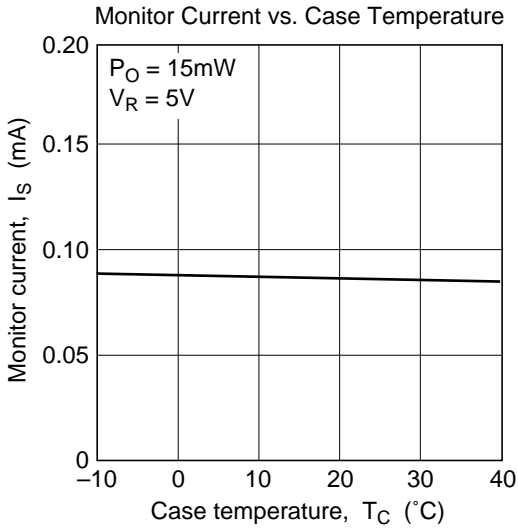
Optical and Electrical Characteristics $(T_c = 25^\circ\text{C})$

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Optical output power	P_o	5	—	—	mW	Kink free
Threshold current	I_{th}	—	45	60	mA	
Operating current	I_{OP}	—	55	70	mA	$P_o = 5 \text{ mW}$
Operating voltage	V_{OP}	—	2.3	2.7	V	$P_o = 5 \text{ mW}$
Slope efficiency	η_s	0.40	0.65	0.90	mW/mA	$3 \text{ (mW)} / (I_{(4\text{mW})} - I_{(1\text{mW})})$
Lasing wavelength	λ_p	630	633	635	nm	$P_o = 5 \text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	6	8	11	deg.	$P_o = 5 \text{ mW}$
Beam divergence perpendicular to the junction	θ_{\perp}	25	30	35	deg.	$P_o = 5 \text{ mW}$
Monitor current	I_s	0.04	0.08	0.14	mA	$P_o = 5 \text{ mW}, V_{R(PD)} = 5 \text{ V}$

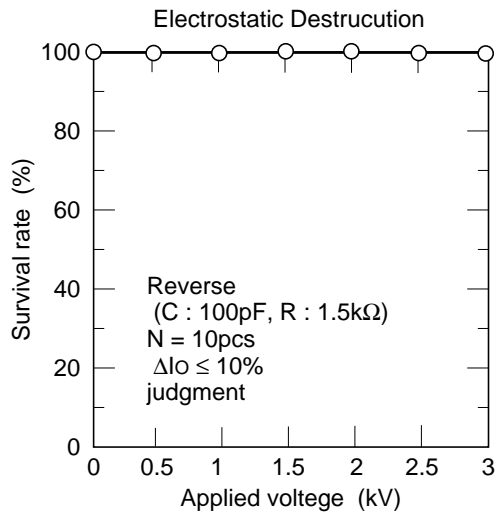
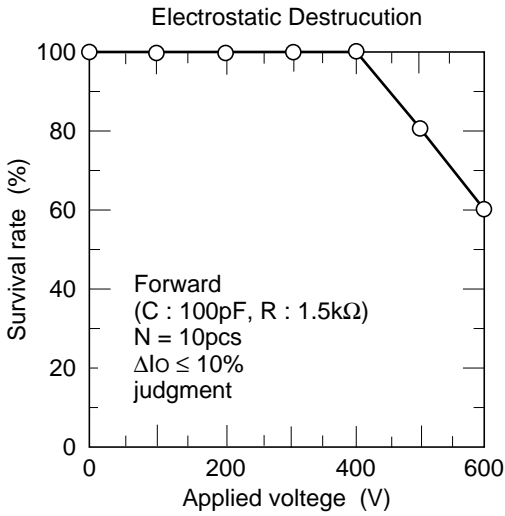
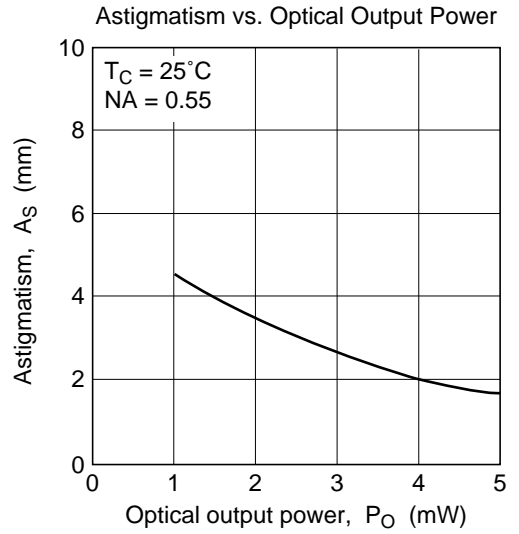
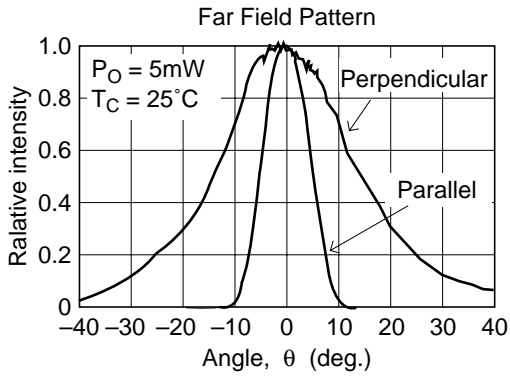
Typical Characteristic Curves



Typical Characteristic Curves (cont)

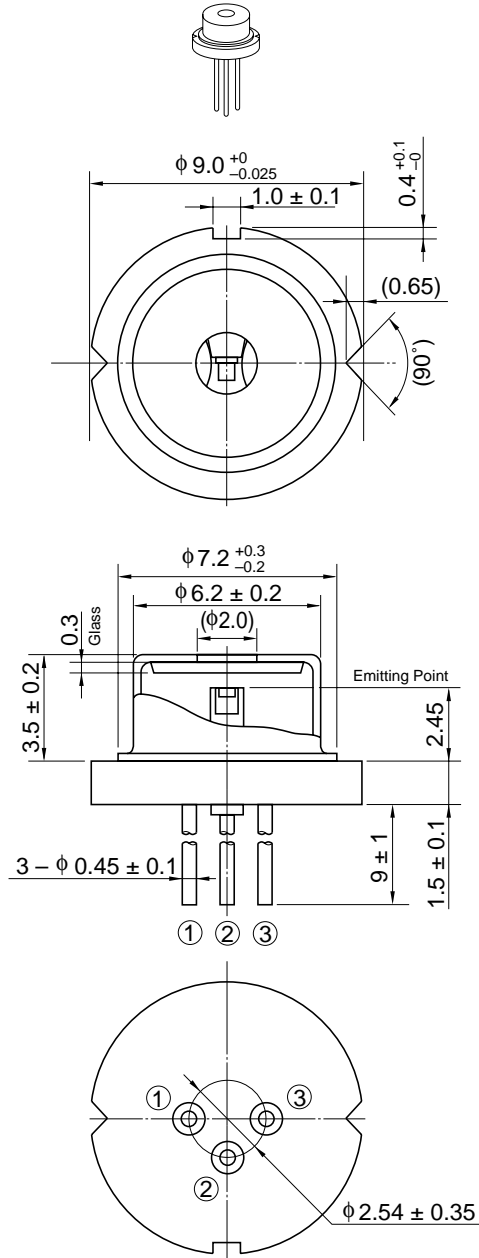


Typical Characteristic Curves (cont)



Package Dimensions

As of January, 2002
Unit: mm



Hitachi Code	LD/G2
JEDEC	—
JEITA	—
Mass (reference value)	1.1 g

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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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