

# HL6339G/42G

633nm Lasing Laser Diode

# HITACHI

ADE-208-1434A (Z)

Rev.1  
Apr. 2002

## Description

The HL6339G/42G is 0.63  $\mu\text{m}$  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.

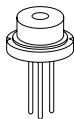
## Application

- Measurement
- Laser analysis systems
- Laser scanner

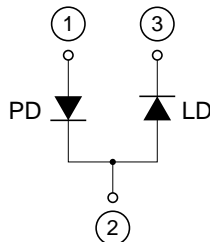
## Features

- 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

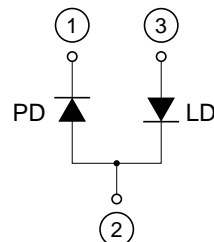
Package Type  
• HL6339G/42G: G2



Internal Circuit  
• HL6339G



Internal Circuit  
• HL6342G



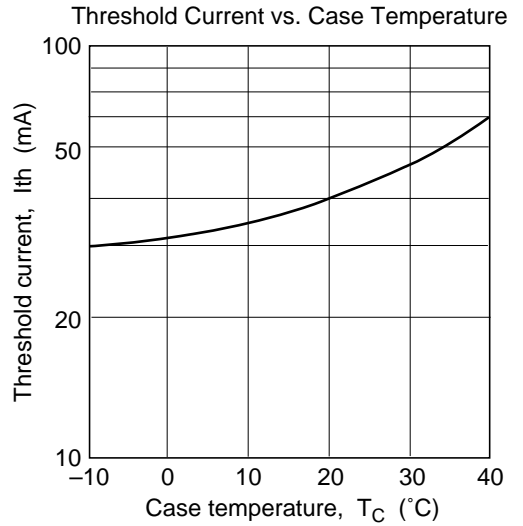
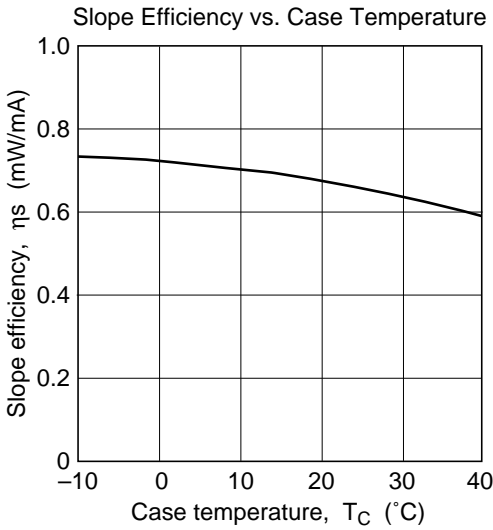
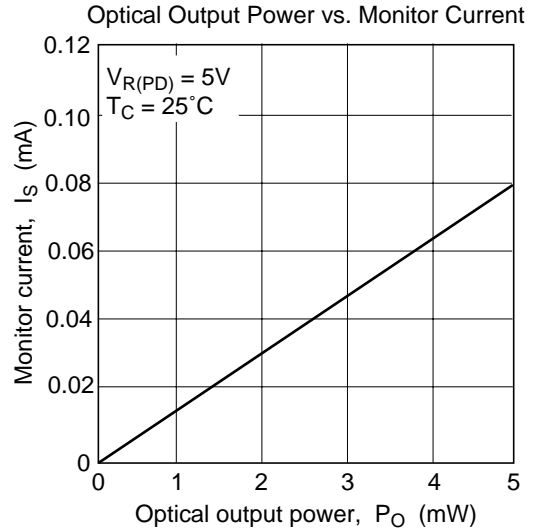
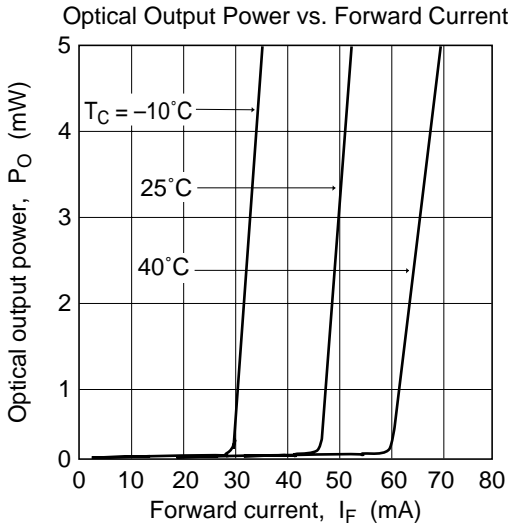
**Absolute Maximum Ratings** $(T_c = 25^\circ\text{C})$ 

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	$^\circ\text{C}$

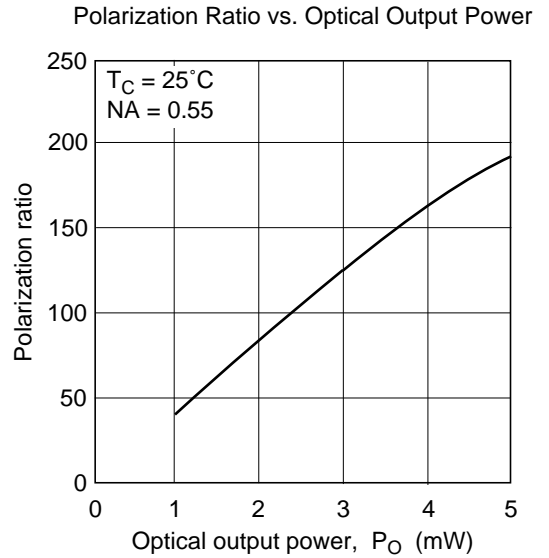
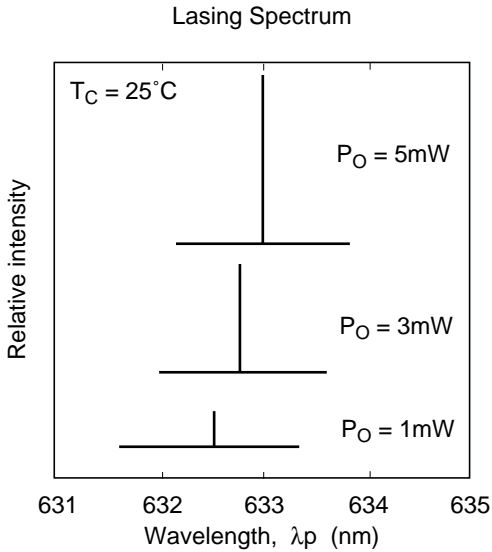
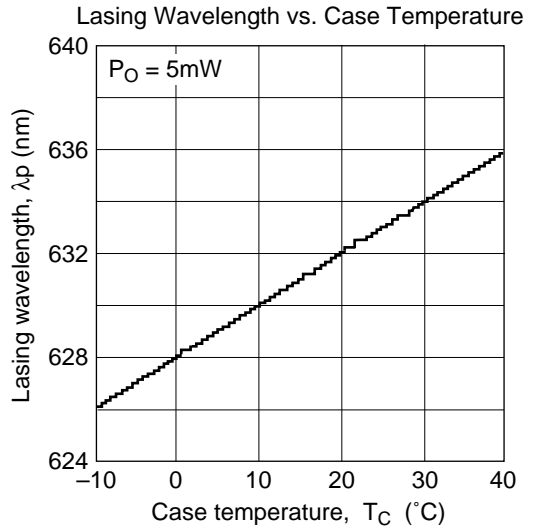
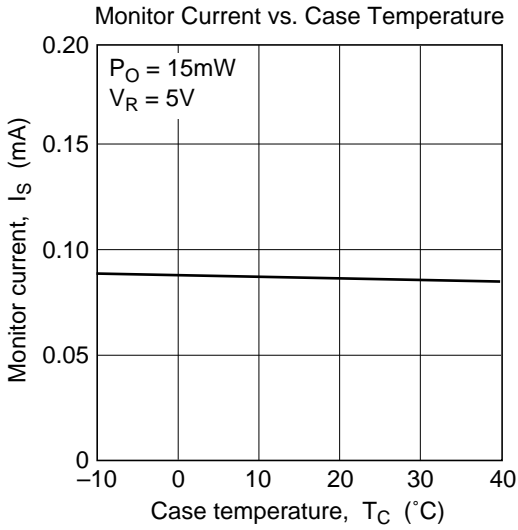
**Optical and Electrical Characteristics** $(T_c = 25^\circ\text{C})$ 

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	$\eta_s$	0.40	0.65	0.90	mW/mA	$3 \text{ (mW)} / (I_{(4\text{mW})} - I_{(1\text{mW})})$
Lasing wavelength	$\lambda_p$	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	$\theta_{\perp}$	25	30	35	deg.	$P_o = 5 \text{ mW}$
Monitor current	$I_s$	0.04	0.08	0.14	mA	$P_o = 5 \text{ mW}, V_{R(PD)} = 5 \text{ V}$

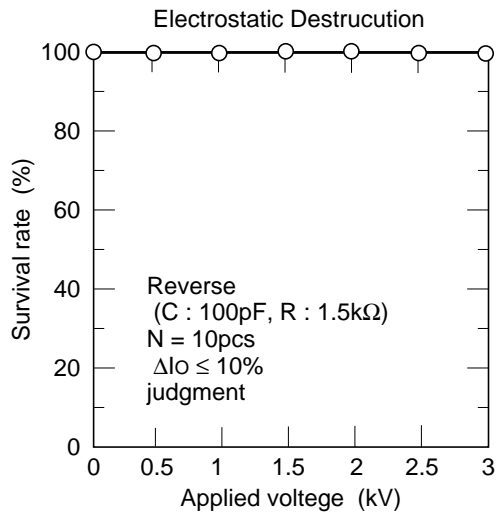
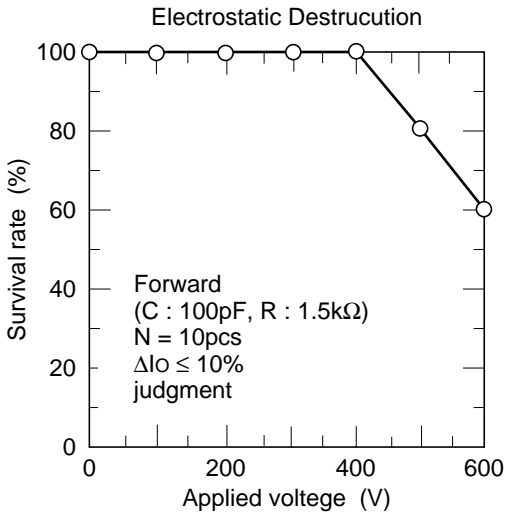
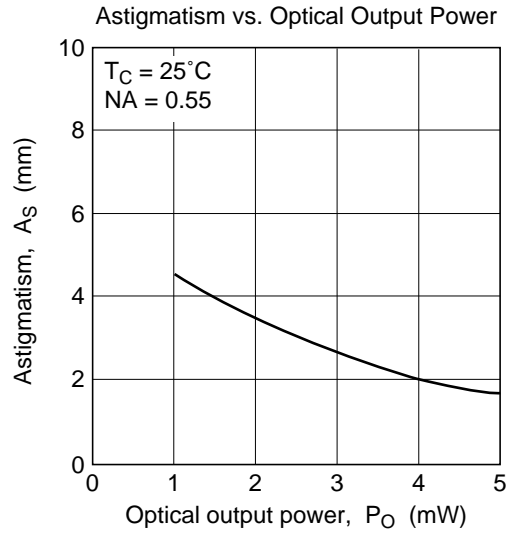
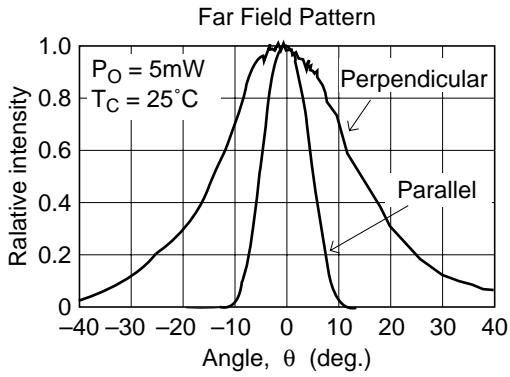
Typical Characteristic Curves



Typical Characteristic Curves (cont)

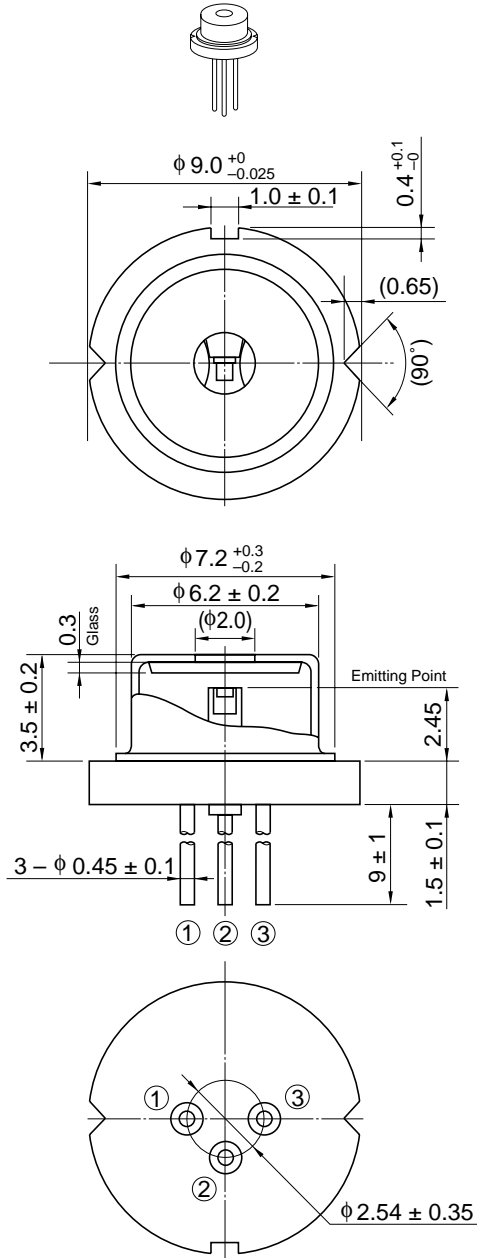


Typical Characteristic Curves (cont)



## 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.

## Sales Offices

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# HITACHI

### Hitachi, Ltd.

Semiconductor & Integrated Circuits  
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan  
Tel: (03) 3270-2111 Fax: (03) 3270-5109

URL <http://www.hitachisemiconductor.com/>

### For further information write to:

Hitachi Semiconductor (America) Inc. 179 East Tasman Drive San Jose, CA 95134 Tel: <1> (408) 433-1990 Fax: <1> (408) 433-0223	Hitachi Europe Ltd. Electronic Components Group Whitebrook Park Lower Cookham Road Maidenhead Berkshire SL6 8YA, United Kingdom Tel: <44> (1628) 585000 Fax: <44> (1628) 585200
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Hitachi Asia Ltd. Hitachi Tower 16 Collyer Quay #20-00 Singapore 049318 Tel: <65>-538-6533/538-8577 Fax: <65>-538-6933/538-3877 URL: <a href="http://semiconductor.hitachi.com.sg">http://semiconductor.hitachi.com.sg</a>
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Hitachi Asia (Hong Kong) Ltd. Group III (Electronic Components) 7/F., North Tower World Finance Centre, Harbour City, Canton Road Tsim Sha Tsui, Kowloon Hong Kong Tel: <852>-(2)-735-9218 Fax: <852>-(2)-730-0281 URL: <a href="http://semiconductor.hitachi.com.hk">http://semiconductor.hitachi.com.hk</a>
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Hitachi Europe GmbH Electronic Components Group Dornacher Straße 3 D-85622 Feldkirchen Postfach 201, D-85619 Feldkirchen Germany Tel: <49> (89) 9 9180-0 Fax: <49> (89) 9 29 30 00
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Hitachi Asia Ltd. (Taipei Branch Office) 4/F, No. 167, Tun Hwa North Road Hung-Kuo Building Taipei (105), Taiwan Tel: <886>-(2)-2718-3666 Fax: <886>-(2)-2718-8180 Telex: 23222 HAS-TP URL: <a href="http://www.hitachi.com.tw">http://www.hitachi.com.tw</a>
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