

# HL6321G/22G

AlGaInP Laser Diodes

# HITACHI

ADE-208-598C (Z)

Sales/ Distribution: Creative Technology Lasers

[www.laser66.com](http://www.laser66.com)

4th Edition

Dec. 2000

## Description

The HL6321G/22G are 0.63  $\mu\text{m}$  band AlGaInP laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser levelers and optical equipment for measurement.

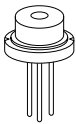
## Application

- Laser levelers
- Measurement

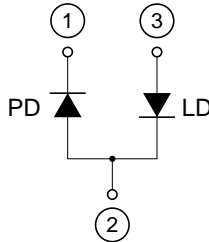
## Features

- Visible light output: 635 nm Typ (nearly equal to He-Ne gas laser)
- Optical output power: 15 mW CW
- Low operating current: 105 mA Max
- Low operating voltage: 2.7 V Max
- TM mode oscillation

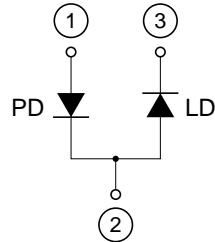
Package Type  
• HL6321G/22G: G2



Internal Circuit  
• HL6321G



Internal Circuit  
• HL6322G



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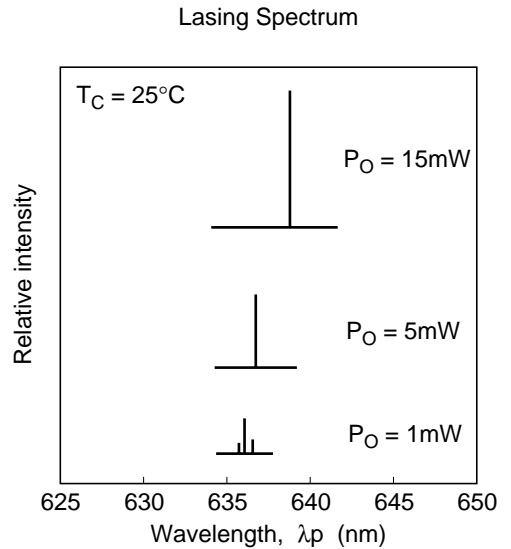
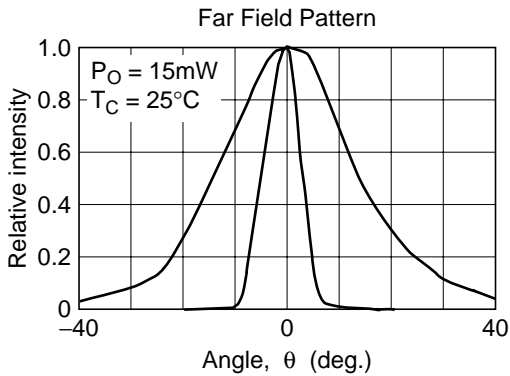
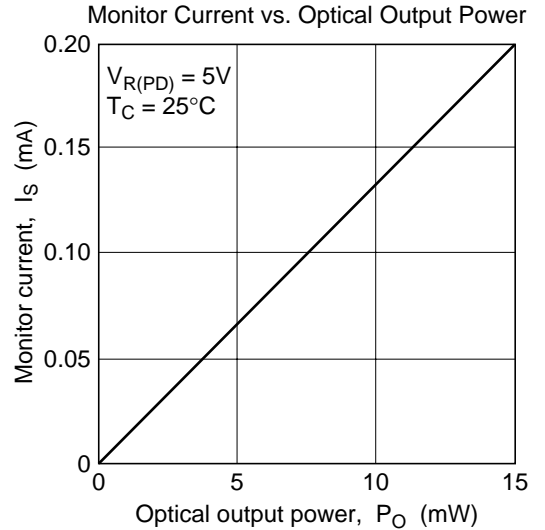
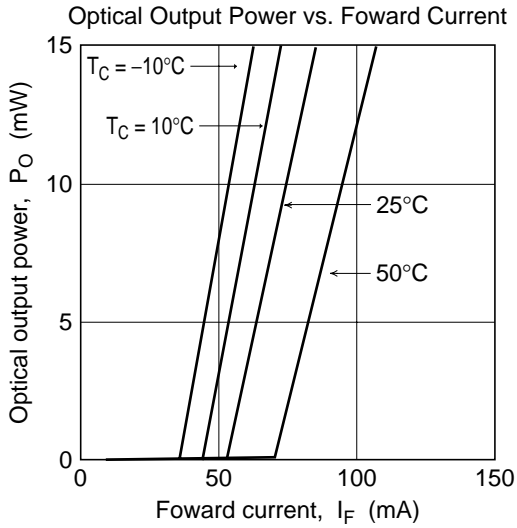
**Absolute Maximum Ratings** ( $T_C = 25^\circ\text{C}$ )

Item	Symbol	Rated Value	Unit
Optical output power	$P_o$	15	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	$T_{opr}$	-10 to +50	$^\circ\text{C}$
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 Conditions
Optical output power	$P_o$	15	—	—	mW	Kink free
Threshold current	$I_{th}$	20	55	75	mA	
Operating current	$I_{OP}$	—	85	105	mA	$P_o = 15 \text{ mW}$
Operating voltage	$V_{OP}$	—	—	2.7	V	$P_o = 15 \text{ mW}$
Slope efficiency	$\eta_s$	0.3	—	0.7	mW/mA	$9 \text{ (mW)} / (I_{(12\text{mW})} - I_{(3\text{mW})})$
Beam divergence parallel to the junction	$\theta_{//}$	5	8	11	deg.	$P_o = 15 \text{ mW}$
Beam divergence perpendicular to the junction	$\theta_{\perp}$	24	30	36	deg.	$P_o = 15 \text{ mW}$
Lasing wavelength	$\lambda_p$	625	635	642	nm	$P_o = 15 \text{ mW}$
Monitor current	$I_s$	0.07	0.20	0.45	mA	$P_o = 15 \text{ mW}, V_{R(PD)} = 5 \text{ V}$

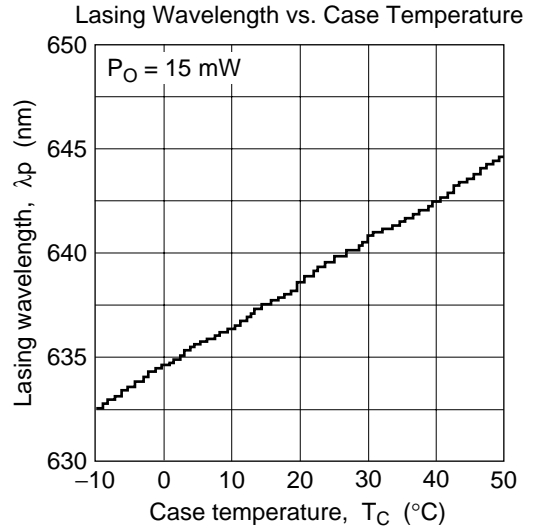
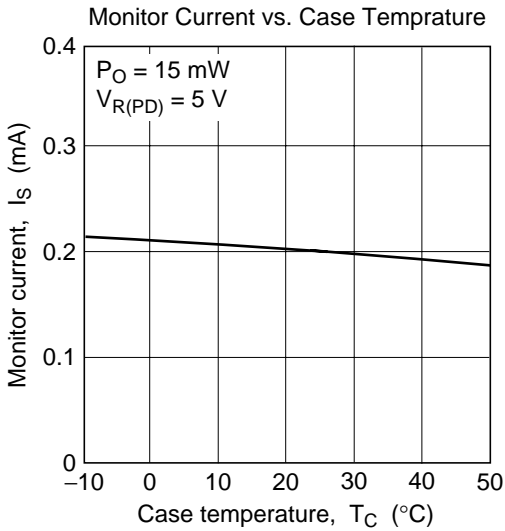
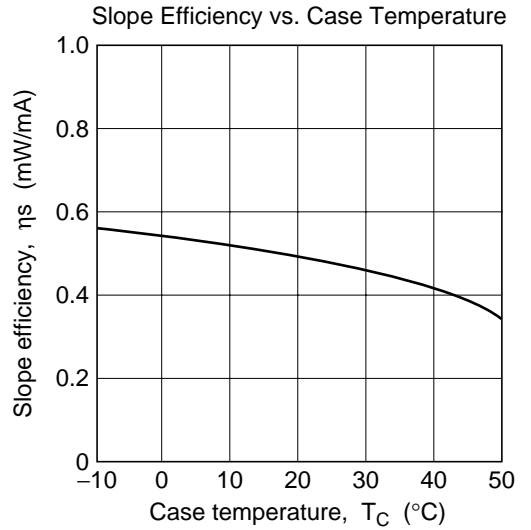
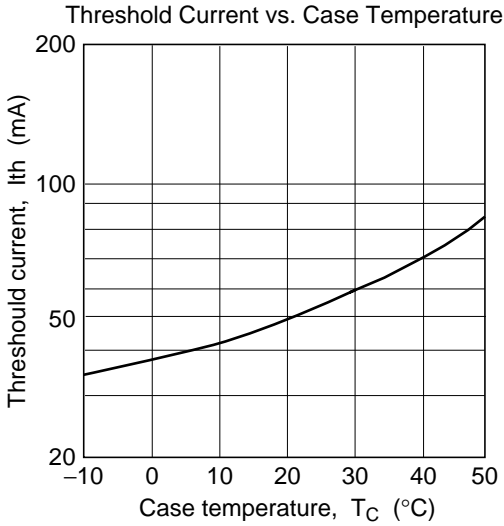
Typical Characteristic Curves



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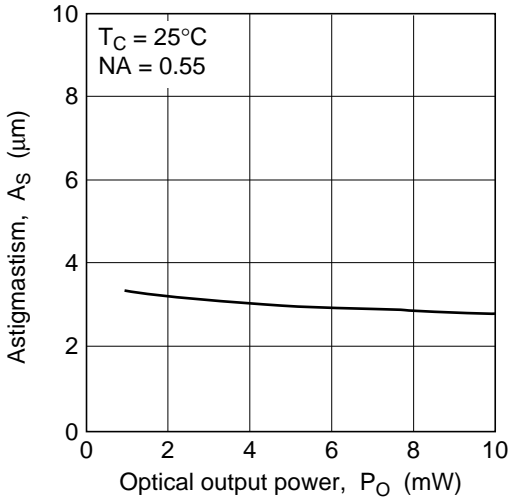
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Typical Characteristic Curves (cont)

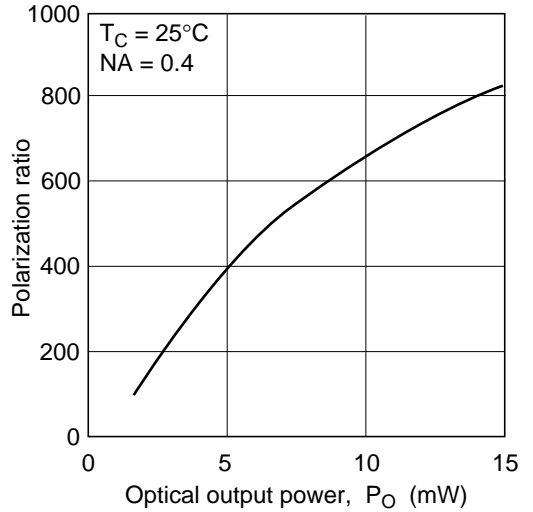


Typical Characteristic Curves (cont)

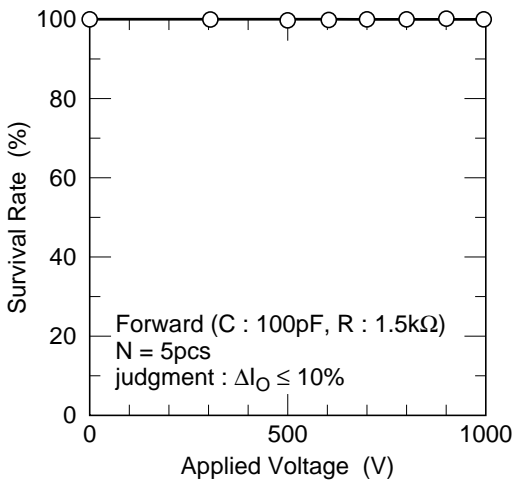
Astigmatism vs. Optical Output Power



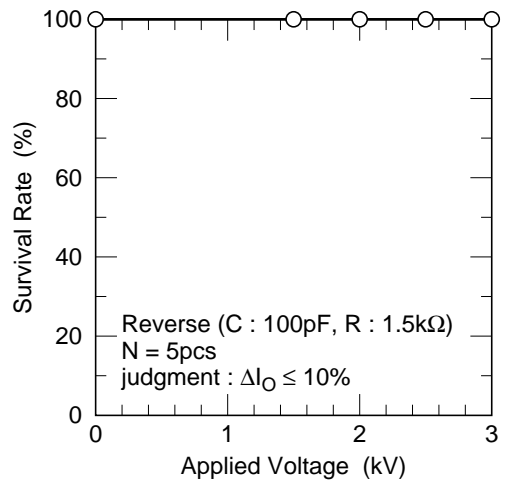
Polarization Ratio vs. Optical Output Power



Electrostatic Destruction (Forward)



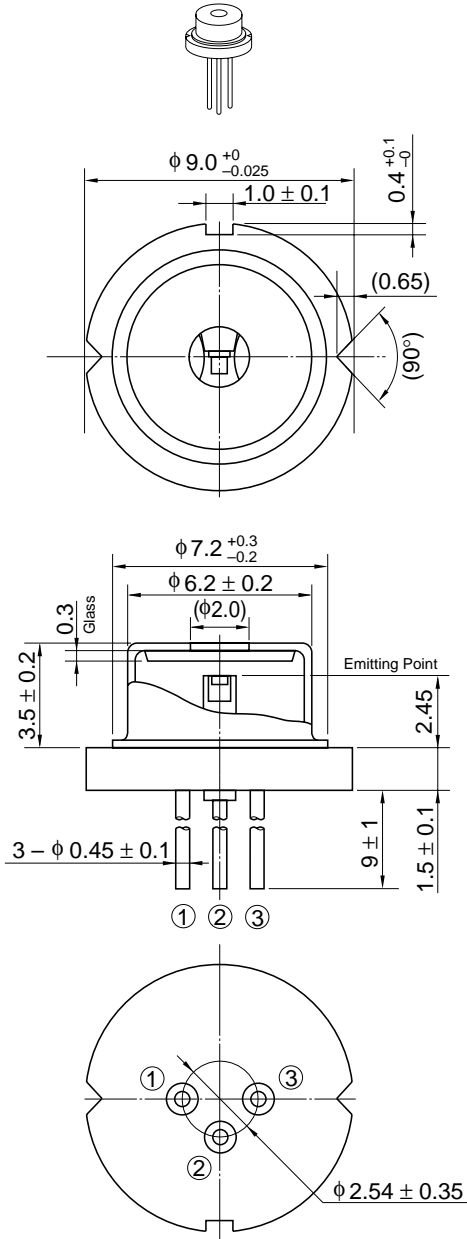
Electrostatic Destruction (Reverse)



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## Package Dimensions

Unit: mm



Hitachi Code	LD/G2
JEDEC	—
EIAJ	—
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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