

HL6315G/16G

AlGaInP Laser Diodes

HITACHI

ADE-208-218D (Z)
5th Edition
Dec. 2000

Description

The HL6315G/16G are 0.63 μm band AlGaInP laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser pointers and optical equipment.

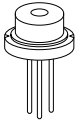
Application

- Laser pointer

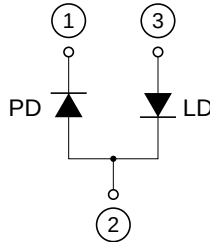
Features

- Visible light output: 635 nm Typ (nearly equal to He-Ne gas laser)
- Optical output power: 3 mW CW
- Low operating current: 30 mA Typ
- Low operating voltage: 2.7 V Max
- TM mode oscillation

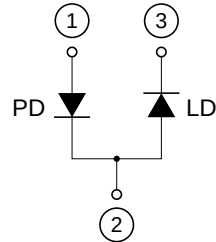
Package Type
• HL6315G/16G: G2



Internal Circuit
• HL6315G



Internal Circuit
• HL6316G



Absolute Maximum Ratings (T_C = 25°C)

Item	Symbol	Rated Value	Unit
Optical output power	P _O	3	mW
Pulse optical output power	P _{O(pulse)}	5 *	mW
LD reverse voltage	V _{R(LD)}	2	V
PD reverse voltage	V _{R(PD)}	30	V
Operating temperature	Topr	−10 to +50	°C
Storage temperature	Tstg	−40 to +85	°C

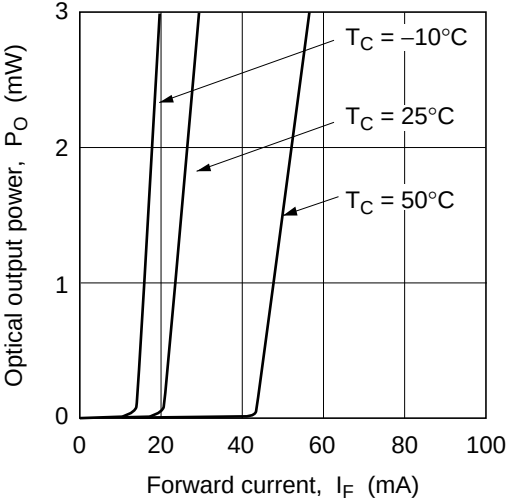
Note: Pulse condition : Pulse width ≤ 1 μs , duty ≤ 50%

Optical and Electrical Characteristics (T_C = 25°C)

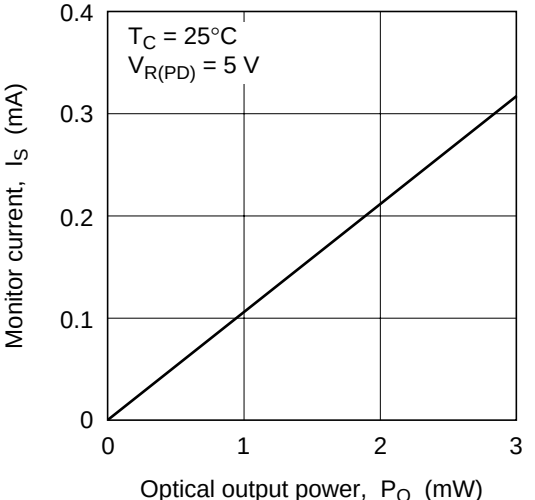
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P _O	3	—	—	mW	Kink free
Threshold current	I _{th}	—	25	35	mA	
Operating current	I _{OP}	—	30	42	mA	P _O = 3 mW
Operating voltage	V _{OP}	—	—	2.7	V	P _O = 3 mW
Beam divergence parallel to the junction	θ//	6	8	10	deg.	P _O = 3 mW
Beam divergence perpendicular to the junction	θ⊥	23	30	39	deg.	P _O = 3 mW
Lasing wavelength	λ _p	630	635	640	nm	P _O = 3 mW
Monitor current	I _s	0.1	0.3	0.6	mA	P _O = 3 mW, V _{R(PD)} = 5 V

Typical Characteristic Curves

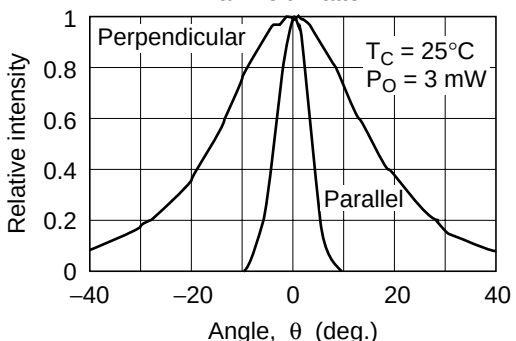
Optical Output Power vs. Forward Current



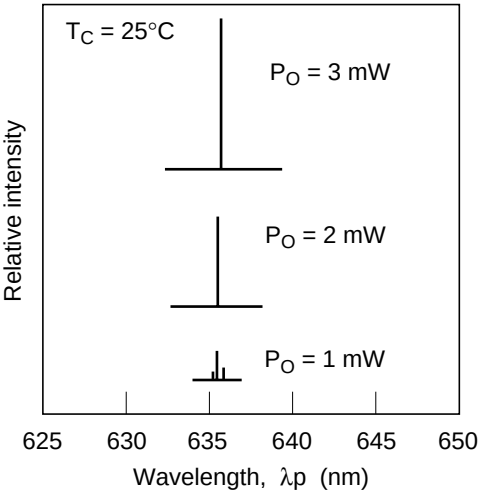
Monitor Current vs. Optical Output Power



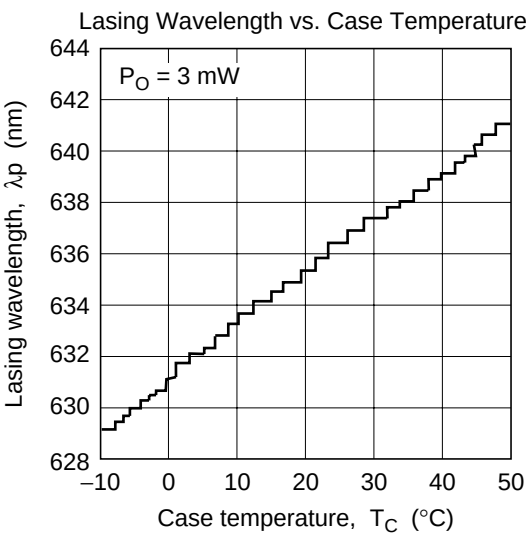
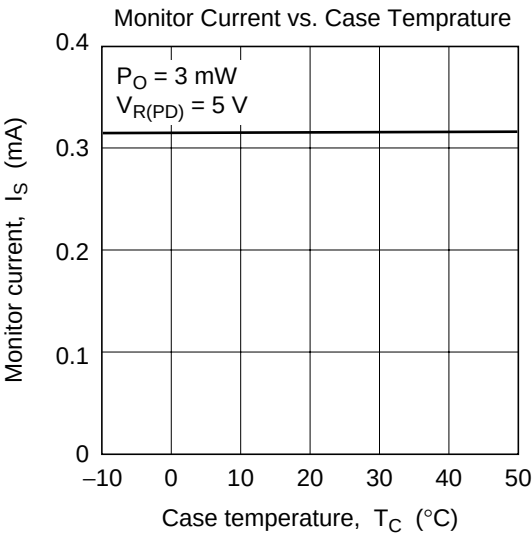
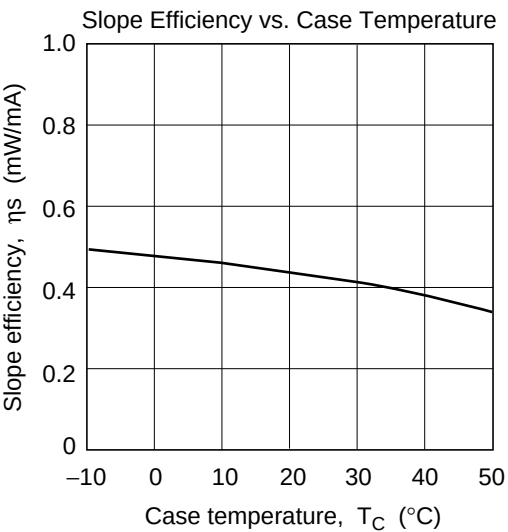
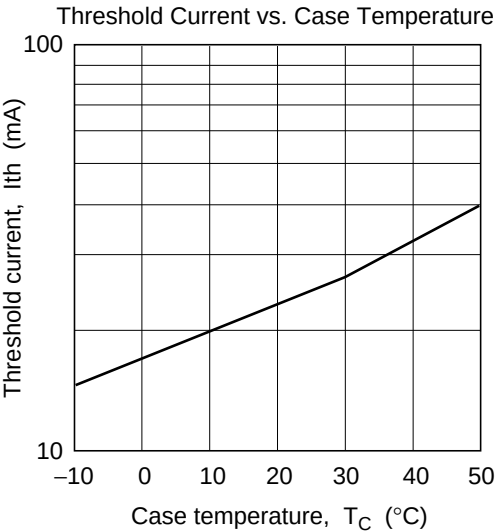
Far Field Pattern



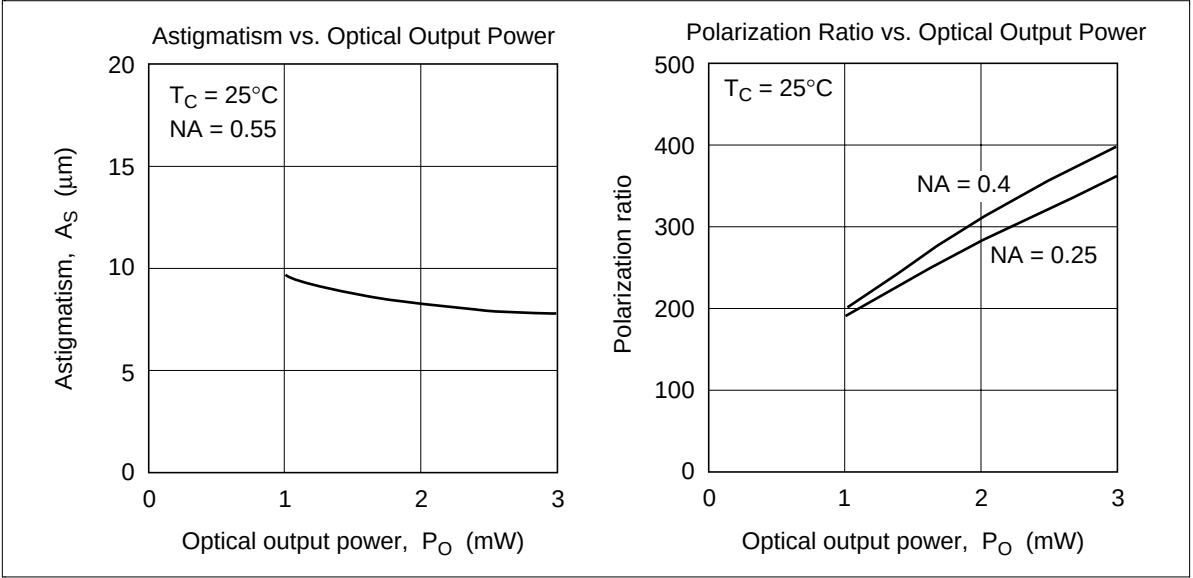
Lasing Spectrum



Typical Characteristic Curves (cont)

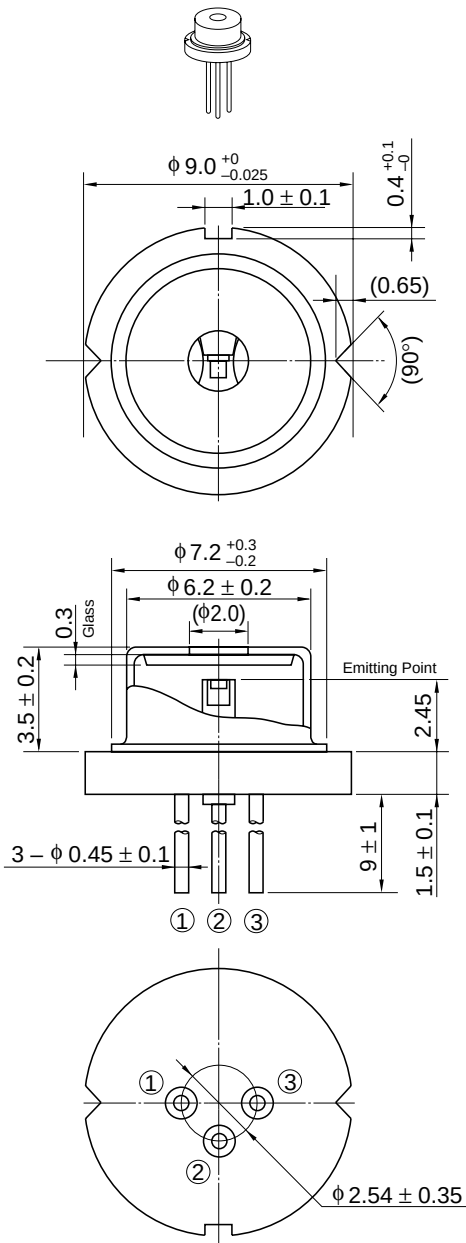


Typical Characteristic Curves (cont)



Package Dimensions

Unit: mm



Hitachi Code	LD/G2
JEDEC	—
EIAJ	—
Mass (reference value)	1.1 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.

HITACHI

Hitachi, Ltd.

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

URL NorthAmerica : <http://semiconductor.hitachi.com/>
 Europe : <http://www.hitachi-eu.com/hel/ecg>
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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 GmbH Electronic Components Group Dornacher StraÙe 3 D-85622 Feldkirchen, Munich Germany Tel: <49> (89) 9 9180-0 Fax: <49> (89) 9 29 30 00	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 : http://www.hitachi.com.sg	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 : http://www.hitachi.com.hk
	Hitachi Europe Ltd. Electronic Components Group. Whitebrook Park Lower Cookham Road Maidenhead Berkshire SL6 8YA, United Kingdom Tel: <44> (1628) 585000 Fax: <44> (1628) 585160	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 : http://www.hitachi.com.tw	

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