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 poiters and optical equipment.

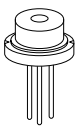
Application

- Laser pointer

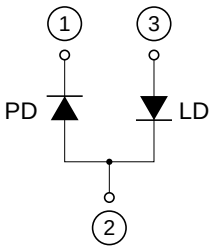
Features

- 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

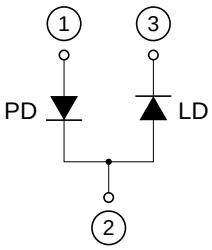
Package Type
• HL6315G/16G: G2



Internal Circuit
• HL6315G



Internal Circuit
• HL6316G



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Absolute Maximum Ratings (T_C = 25°C)

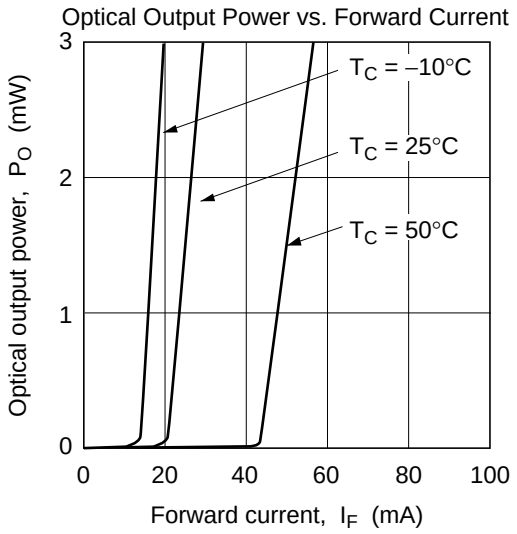
Item	Symbol	Rated Value	Unit
Optical output power	P_O	3	mW
Pulse optical output power	$P_{O(pulse)}$	5 *	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	Topr	–10 to +50	°C
Storage temperature	Tstg	–40 to +85	°C

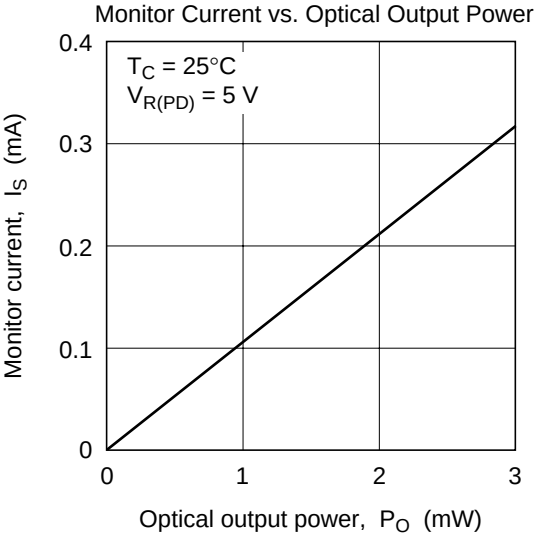
Note: Pulse condition : Pulse width ≤ 1 μs , duty ≤ 50%

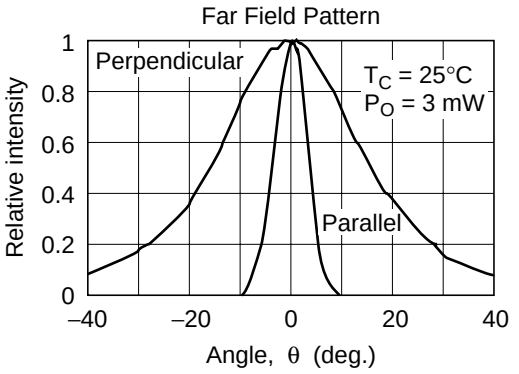
Optical and Electrical Characteristics (T_C = 25°C)

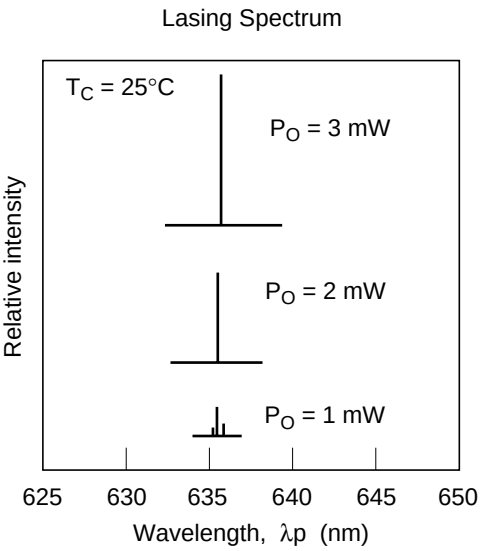
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	3	—	—	mW	Kink free
Threshold current	Ith	—	25	35	mA	
Operating current	I_{OP}	—	30	42	mA	P_O = 3 mW
Operating voltage	V_{OP}	—	—	2.7	V	P_O = 3 mW
Beam divergence parallel to the junction	θ//	6	8	10	deg.	P_O = 3 mW
Beam divergence parpendicular to the junction	θ⊥	23	30	39	deg.	P_O = 3 mW
Lasing wavelength	λp	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



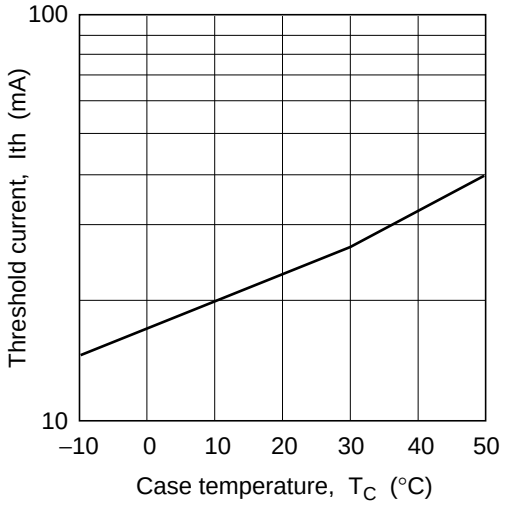




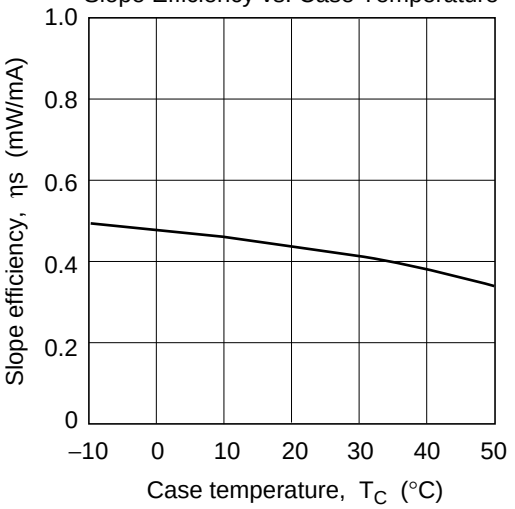


Typical Characteristic Curves (cont)

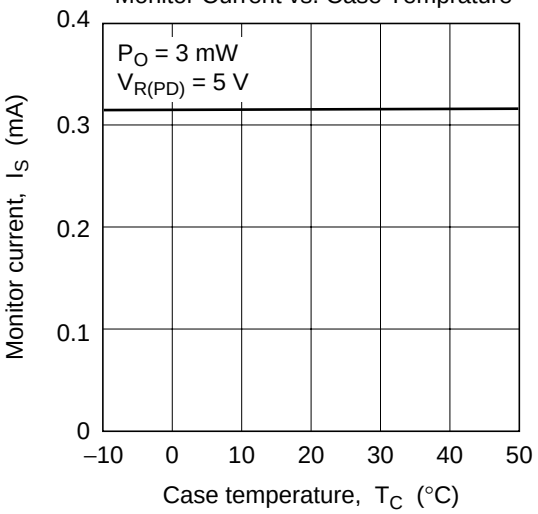
Threshold Current vs. Case Temperature



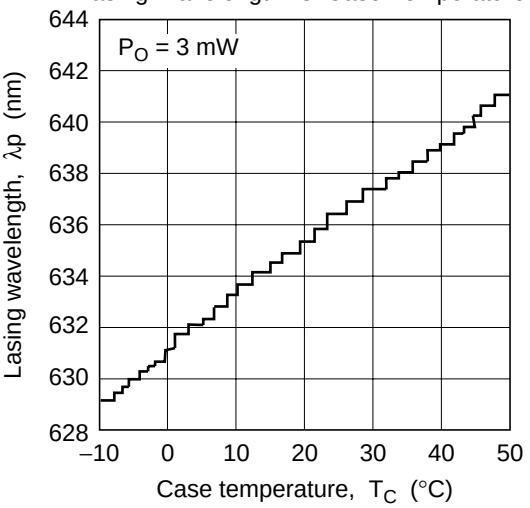
Slope Efficiency vs. Case Temperature



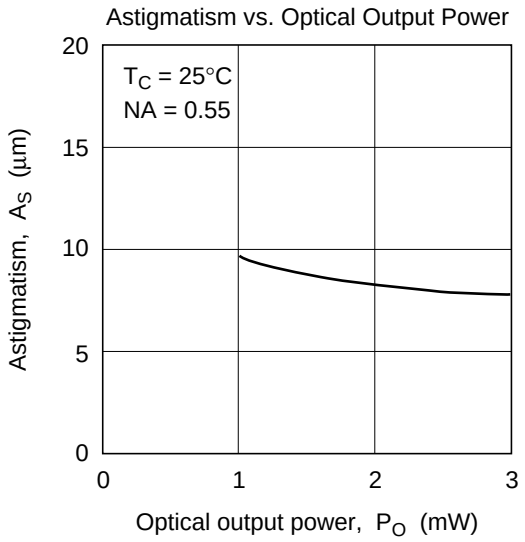
Monitor Current vs. Case Temprature

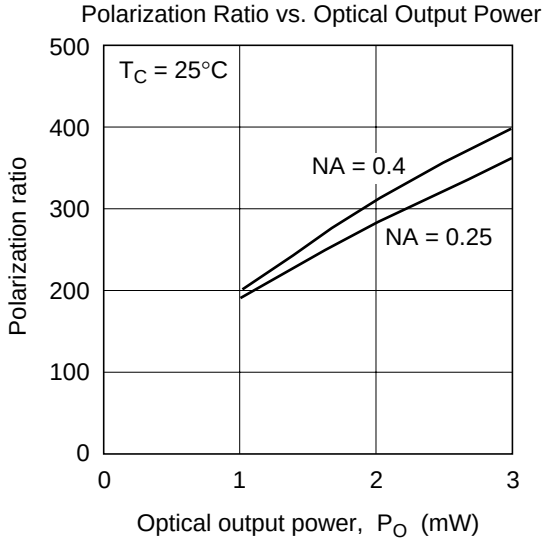


Lasing Wavelength vs. Case Temperature



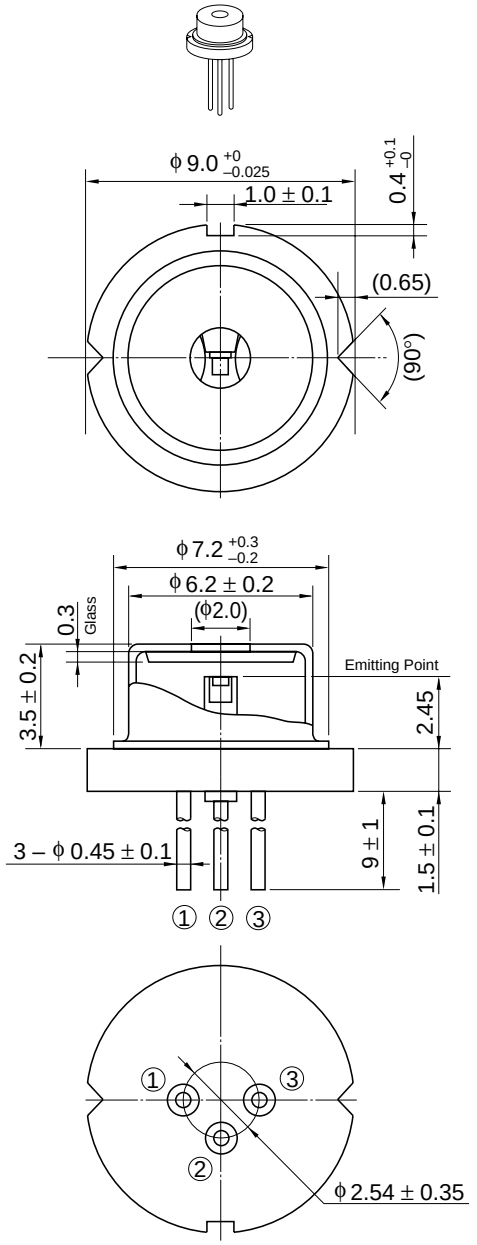
Typical Characteristic Curves (cont)





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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