HL6325/26G

Low Operating Current Visible Laser Diode

HITACHI

ADE-208-781A (Z)
2nd Edition
Jul. 1999

Description

The HL6325/26G are 0.63 μm band AlGaInP laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser levelers, laser scanners and optical equipment for measurement.

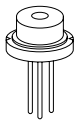
Application

- Laser leveler
- Laser scanner
- Measurement

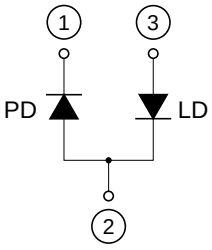
Features

- Visible light output : 635 nm Typ (nearly equal to He-Ne gas laser)
- Optical output power : 5 mW CW
- Low operating current : 40 mA Typ
- Low operating voltage : 2.4 V Max
- Operating temperature : +60°C
- TM mode oscillation

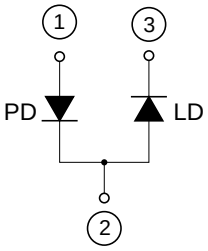
Package Type
• HL6325/26G: G2



Internal Circuit
• HL6325G



Internal Circuit
• HL6326G



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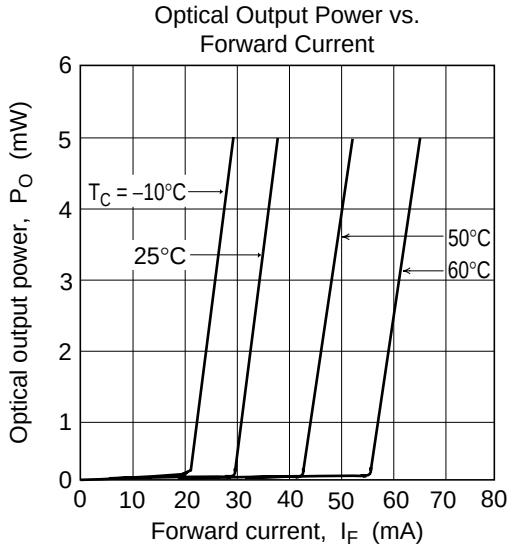
Absolute Maximum Ratings (T_C = 25°C)

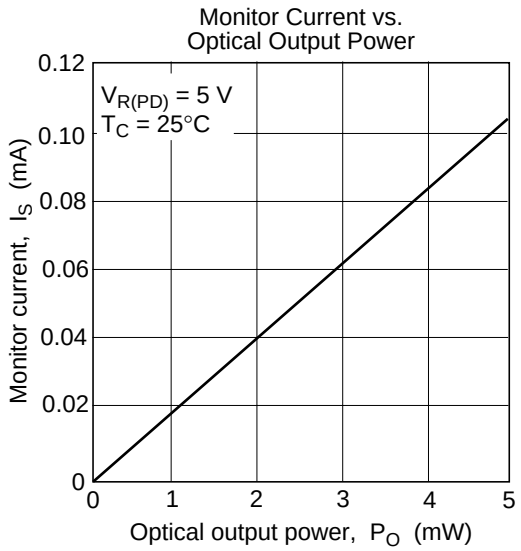
Item	Symbol	Value	Unit
Optical output power	P_O	5	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	Topr	–10 to +60	°C
Storage temperature	Tstg	–40 to +85	°C

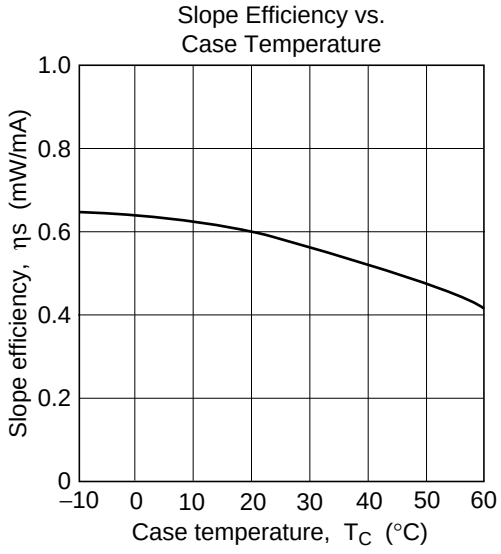
Optical and Electrical Characteristics (T_C = 25°C)

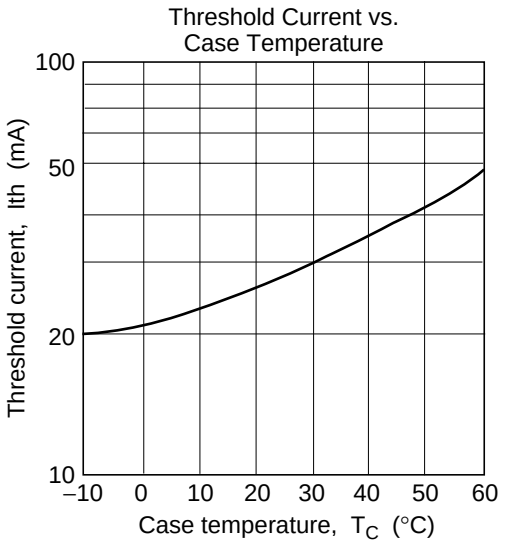
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Optical output power	P_O	5	—	—	mW	Kink free
Threshold current	Ith	—	30	50	mA	
Operating current	I_{op}	—	40	60	mA	P_O = 5 mW
Operating voltage	V_{OP}	—	2.2	2.4	V	P_O = 5 mW
Slope efficiency	ηs	0.3	0.5	0.8	mW/mA	3(mW) / ($I_{(4mW)}$ – $I_{(1mW)}$)
Lasing wavelength	λp	630	635	640	nm	P_O = 5 mW
Beam divergence parallel to the junction	θ//	6	8	11	deg.	P_O = 5 mW
Beam divergence parpendicular to the junction	θ⊥	25	31	37	deg.	P_O = 5 mW
Monitor current	I_S	0.05	0.1	0.25	mA	P_O = 5 mW, $V_{R(PD)}$ = 5V

Typical Characteristic Curves

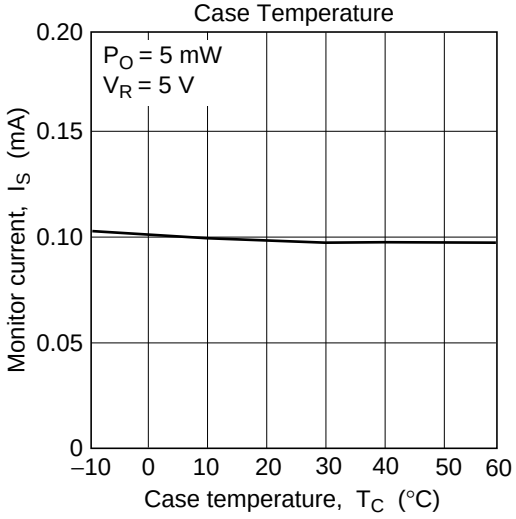




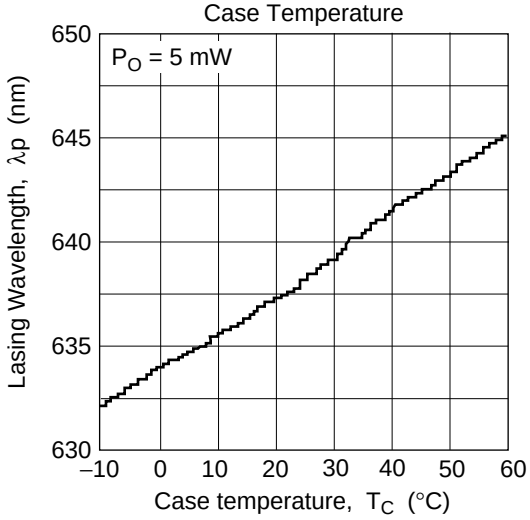




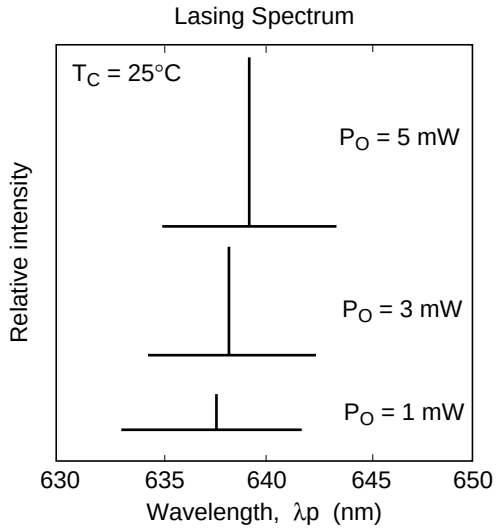
Monitor Current vs. Case Temperature



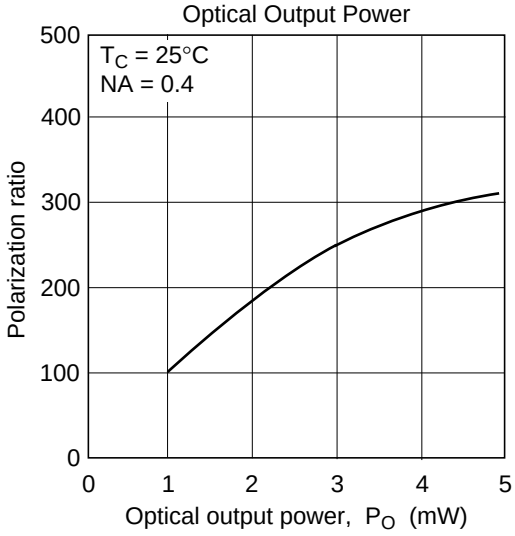
Lasing Wavelength vs. Case Temperature



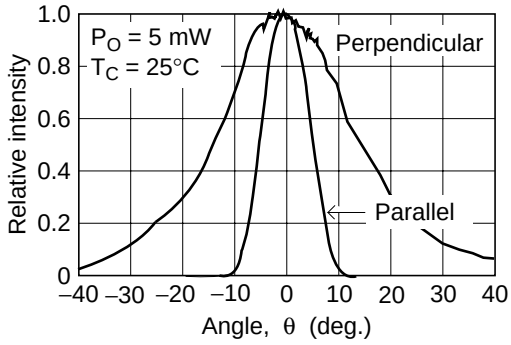
Lasing Spectrum



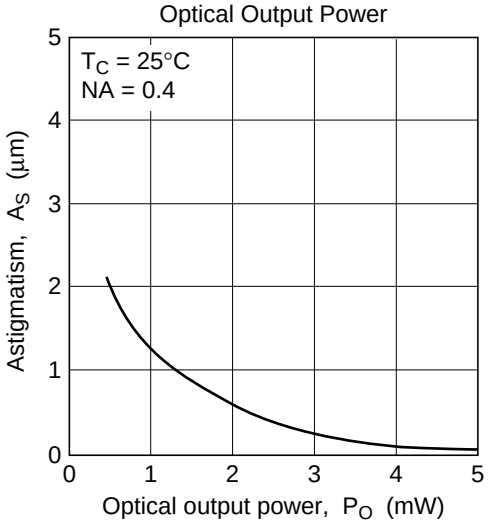
Polarization Ratio vs. Optical Output Power



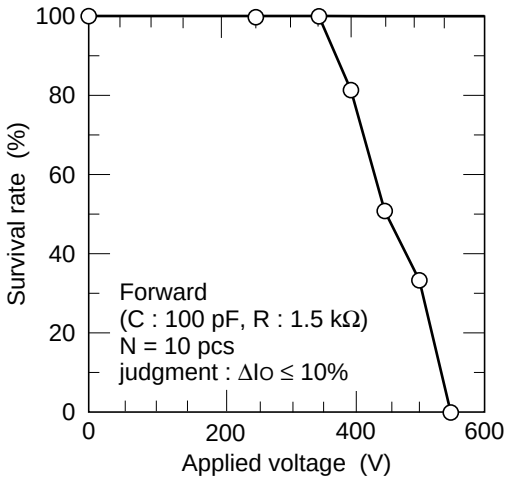
Far Field Pattern



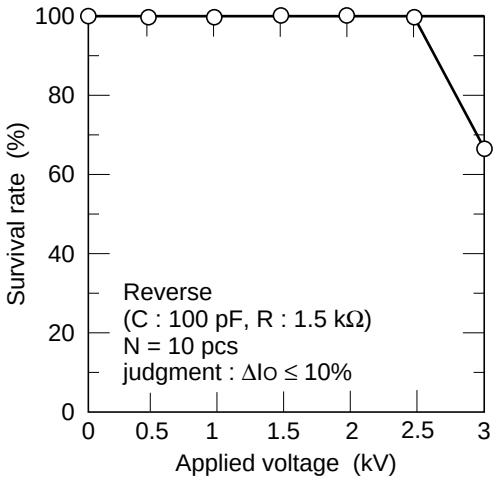
Astigmatism vs.
Optical Output Power



Electrostatic Destruction (Forward)

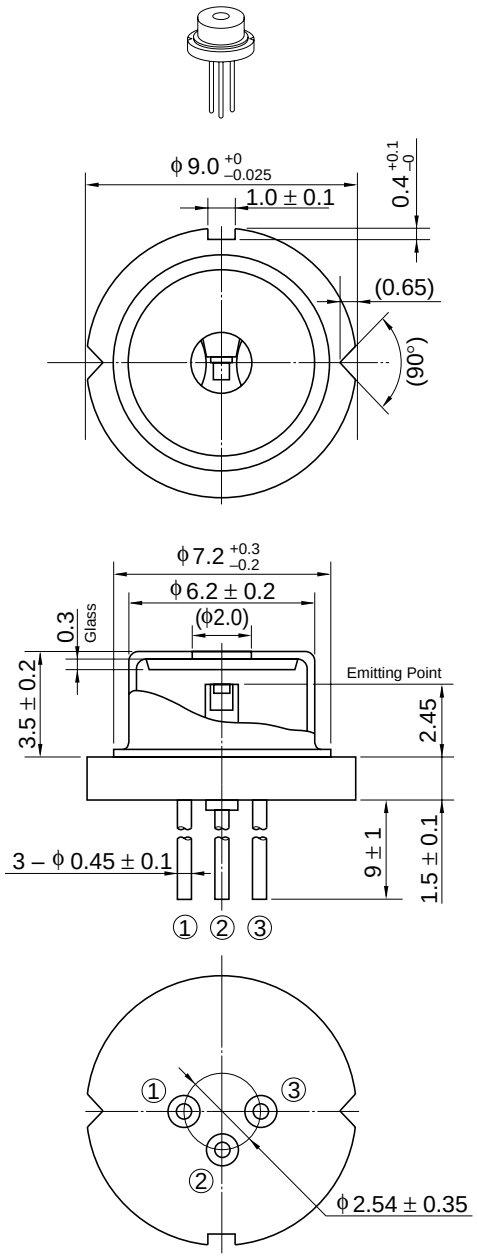


Electrostatic Destruction (Reverse)



Package Dimensions

Unit: mm



Hitachi Code	LD/G2
JEDEC	—
EIAJ	—
Weight (reference value)	1.1 g

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