HL8325G

GaAlAs Laser Diode

HITACHI

ADE-208-582A (Z)

2nd Edition
Dec. 2000

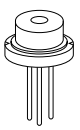
Description

The HL8325G is a high-power 0.8 μm band GaAlAs laser diode with a TQW (triple quantum well) structure. Its internal circuit configuration is suitable for operation on a single positive supply voltage. It is suitable as a light source for optical disk memories, card readers and various other types of optical equipment.

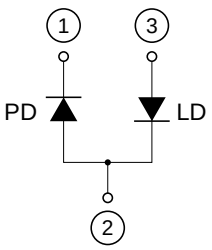
Features

- Infrared light output: λp = 820 to 840 nm
- High power: standard continuous operation at 40 mW (CW), pulsed operation at 50 mW
- Built-in monitor photodiode
- Single longitudinal mode

Package Type
• HL8325G: G2



Internal Circuit



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Absolute Maximum Ratings

(T_C = 25°C)

Item	Symbol	Value	Unit
Optical output power	P_O	40	mW
Pulse optical output power	$P_{O(pulse)}$	50 *	mW
Laser diode reverse voltage	$V_{R(LD)}$	2	V
Photo diode reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	Topr	–10 to +60	°C
Storage temperature	Tstg	–40 to +85	°C

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

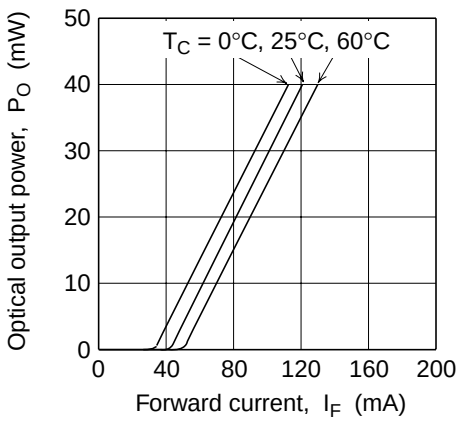
Optical and Electrical Characteristics

(T_C = 25°C ± 3°C)

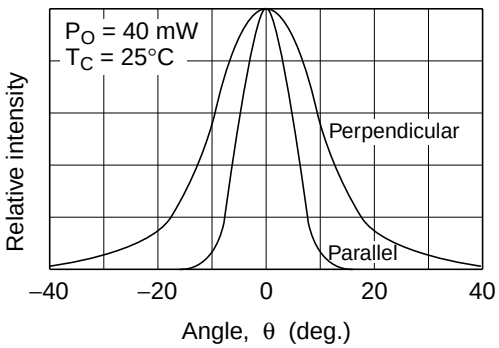
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	40	—	—	mW	Kink free
Threshold current	Ith	—	40	70	mA	
Slope efficiency	ηs	0.4	0.5	0.9	mW/mA	24 (mW) / ($I_{(32mW)}$ – $I_{(8mW)}$)
Beam divergence parallel to the junction	θ//	7	10	14	deg.	P_O = 40 mW, FWHM
Beam divergence parpendicular to the junction	θ⊥	18	22	32	deg.	P_O = 40 mW, FWHM
Asitgmatism	A_S	—	5	—	µm	P_O = 4 mW, NA = 0.4
Lasing wavelength	λp	820	830	840	nm	P_O = 40 mW
Monitor current	I_S	20	40	130	µA	P_O = 4 mW, $V_{R(PD)}$ = 5 V

Typical Characteristic Curves

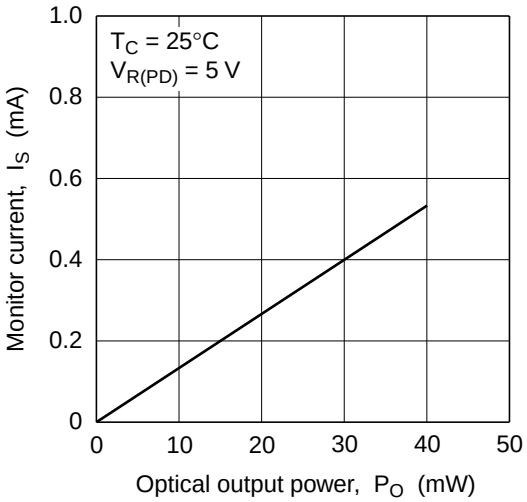
Optical Output Power vs. Forward Current



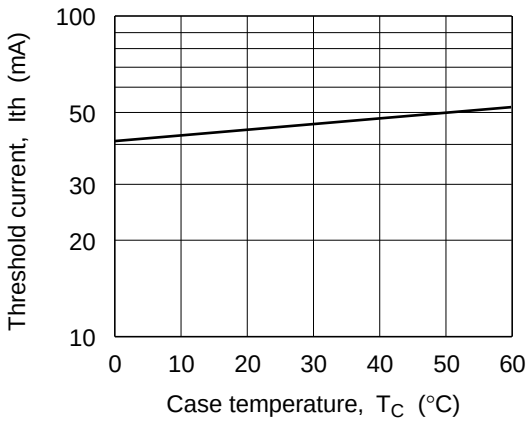
Far Field Pattern



Monitor Output vs. Optical Output Power

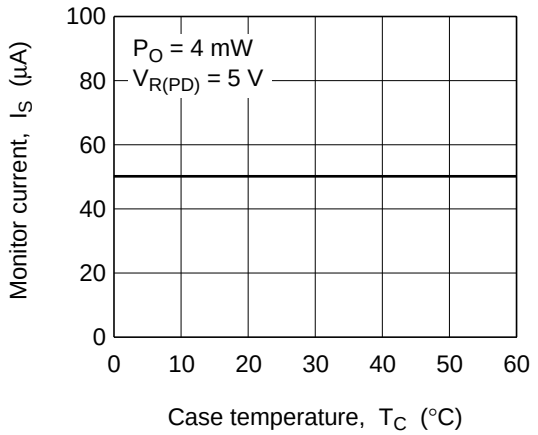


Temperature Dependence of Threshold Current

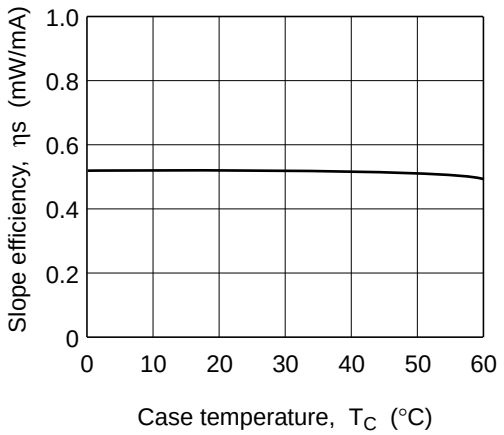


Typical Characteristic Curves (cont)

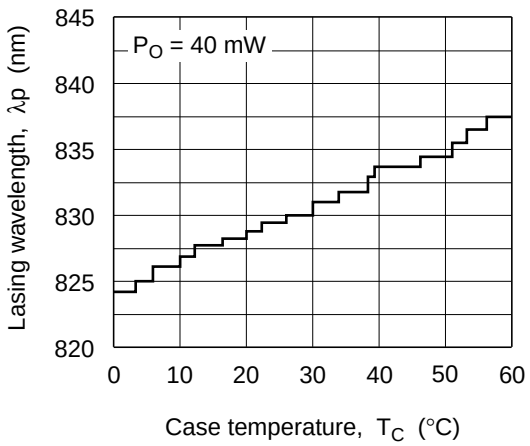
Temperature Dependence of Monitor Current



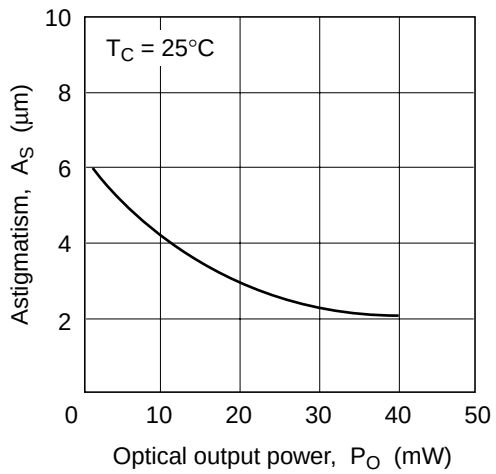
Temprature Dependence of Slope Efficiency



Temperature Dependence of Lasing Wavelength



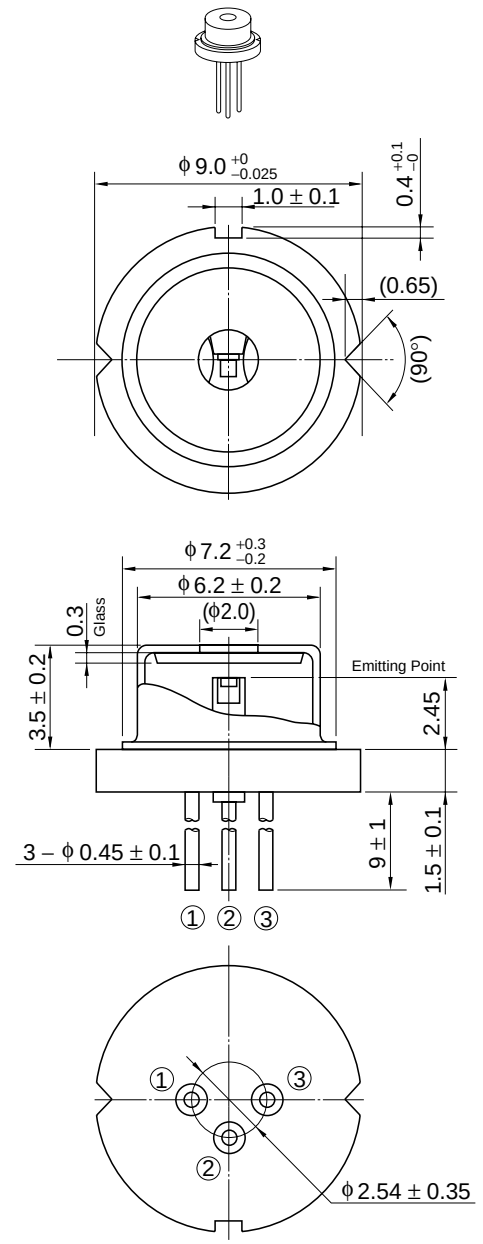
Optical Output Power Dependence of Astigmatism



Package Dimensions

As of January, 2001

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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