HL8325G

GaAlAs Laser Diode

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ODE-208-582B (Z)

Rev.2
Jan. 2003

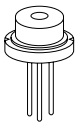
Description

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.

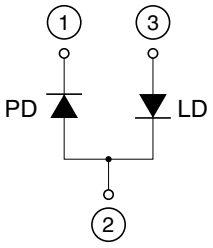
Features

- 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



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%

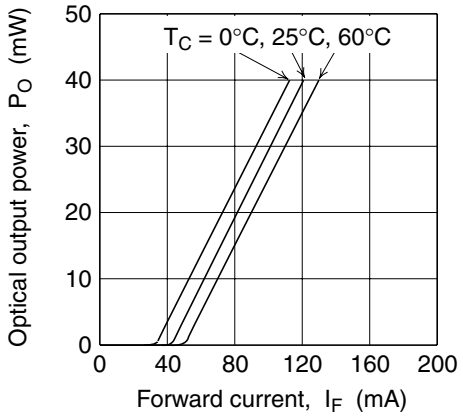
Optical and Electrical Characteristics

(T_C = 25°C ± 3°C)

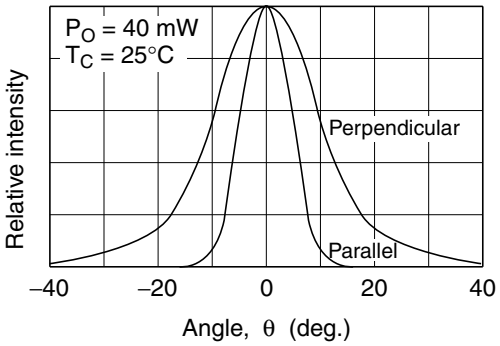
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	Ith	—	40	70	mA	—
Slope efficiency	ηs	0.4	0.5	0.9	mW/mA	24 (mW) / ($I_{(32mW)}$ – $I_{(8mW)}$)
Beam divergence parallel to the junction	θ//	7	10	14	deg.	P_O = 40 mW, FWHM
Beam divergence parpendicular to the junction	θ⊥	18	22	32	deg.	P_O = 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

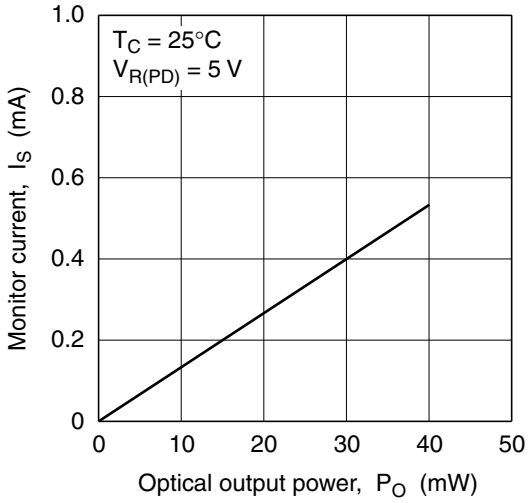
Optical Output Power vs. Forward Current



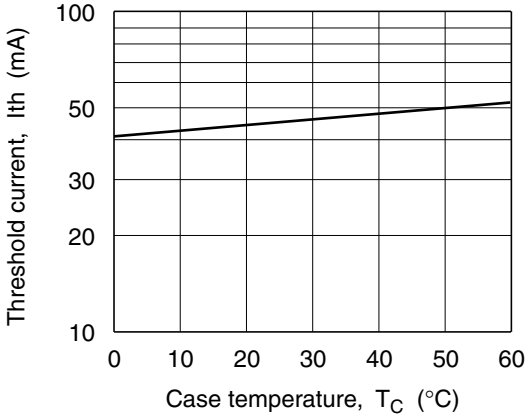
Far Field Pattern



Monitor Output vs. Optical Output Power



Temperature Dependence of Threshold Current



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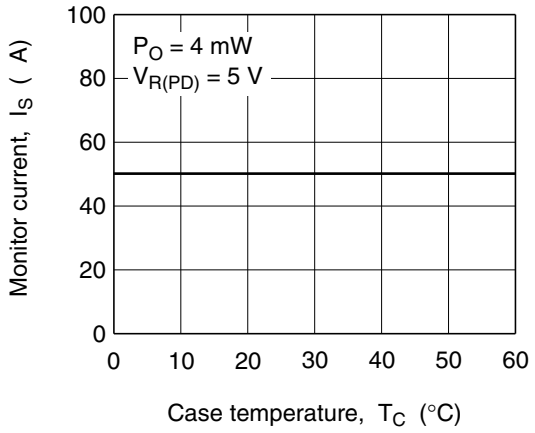
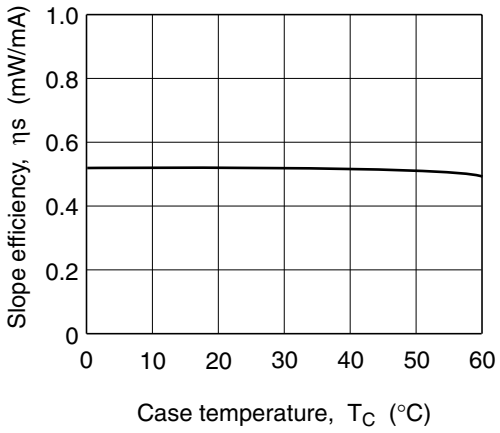
Typical Characteristic Curves (cont)

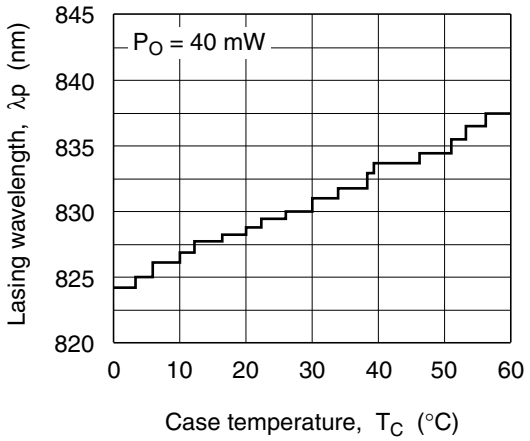
Temperature Dependence of Monitor Current



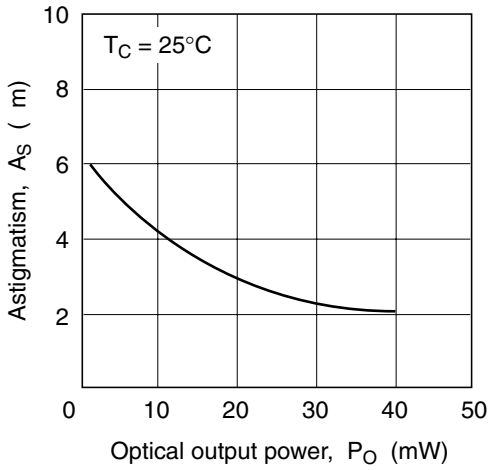
Temprature Dependence of Slope Efficiency



Temperature Dependence of Lasing Wavelength



Optical Output Power Dependence of Astigmatism



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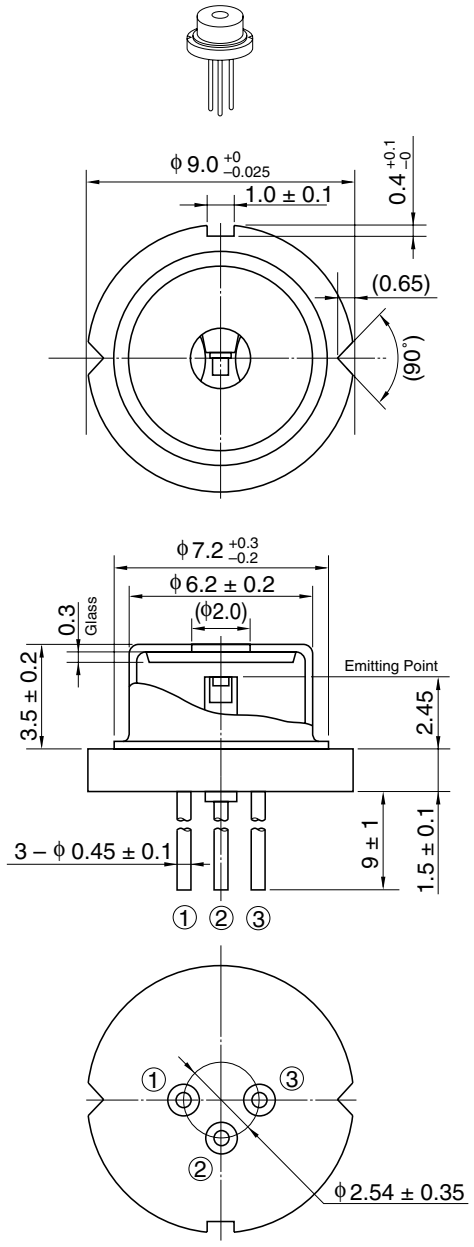
Package Dimensions

As of July, 2002

Unit: mm



OPJ Code	LD/G2
JEDEC	—
JEITA	—
Mass (reference value)	1.1 g

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