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# HL8333G

GaAlAs Laser Diode



ODE-208-014 (Z)

Rev.0  
May. 2005

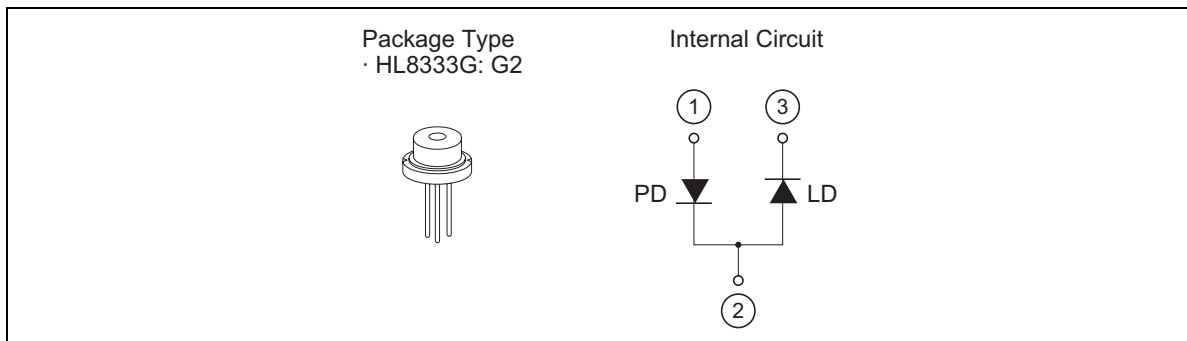
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## Description

The HL8333G is a high-power 0.8  $\mu\text{m}$  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:  $\lambda_p = 820$  to  $840$  nm
- High power: standard continuous operation at 40 mW (CW), pulsed operation at 50 mW
- Built-in monitor photodiode
- Single longitudinal mode



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### Absolute Maximum Ratings

( $T_C = 25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Optical output power	$P_O$	40	mW
Pulse optical output power	$P_{O(\text{pulse})}$	50 *	mW
Laser diode reverse voltage	$V_{R(\text{LD})}$	2	V
Photo diode reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	$T_{opr}$	-10 to +60	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +85	$^\circ\text{C}$

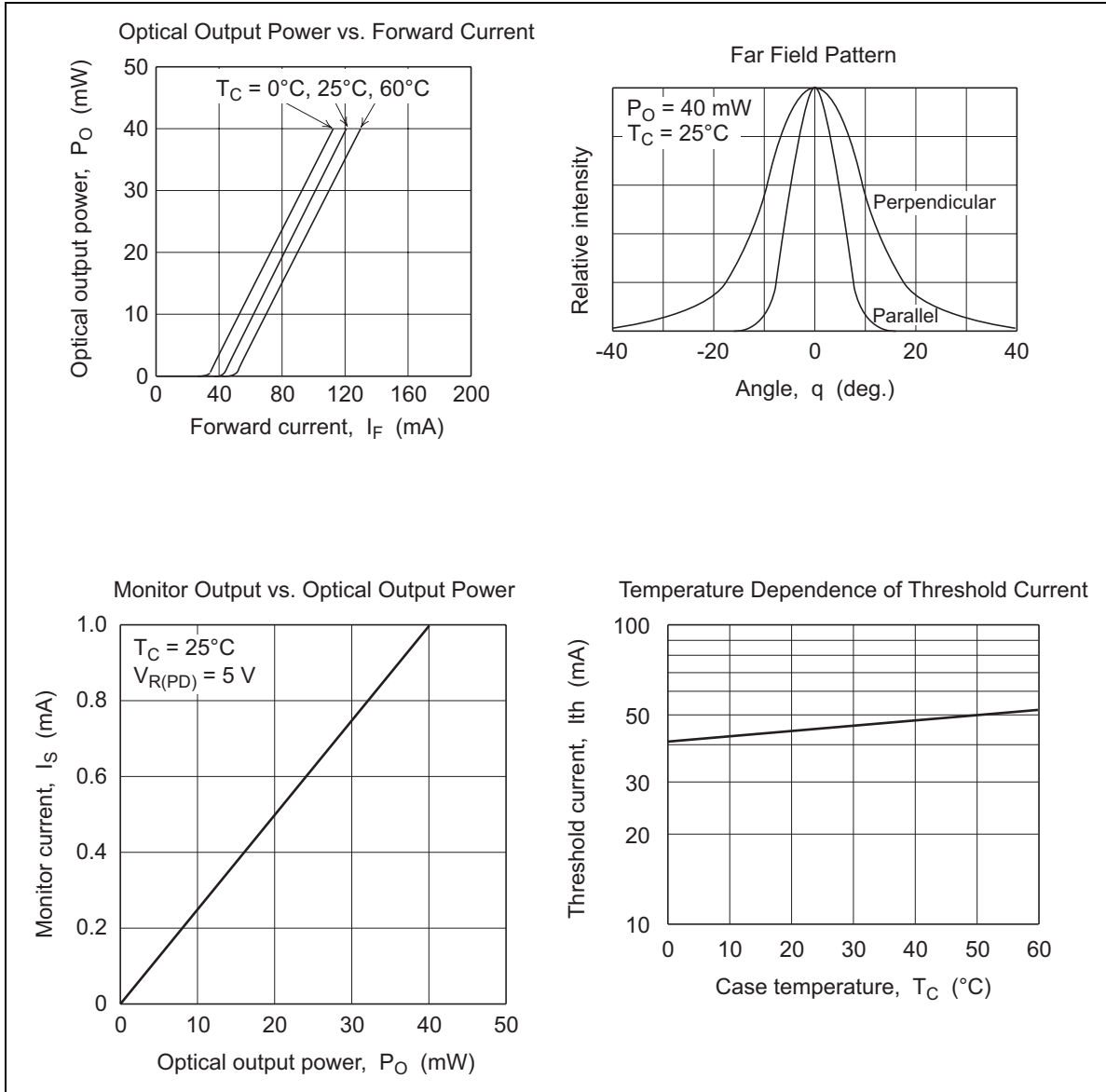
Note: Pulse condition : Pulse width = 1  $\mu\text{s}$ , duty = 50%

### Optical and Electrical Characteristics

( $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$ )

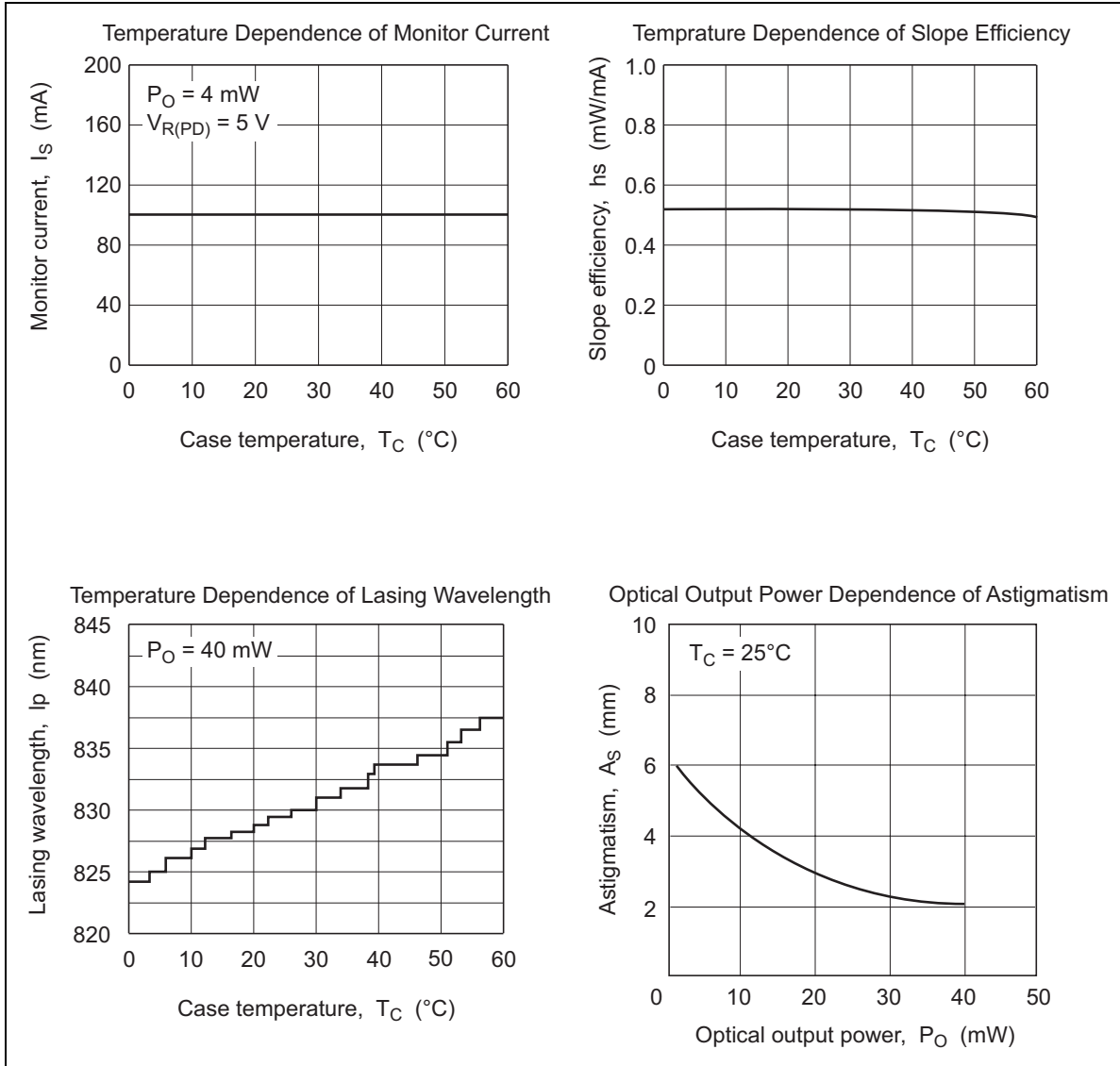
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	$I_{th}$	—	40	70	mA	—
Slope efficiency	$\eta_s$	0.4	0.5	0.9	mW/mA	$24 \text{ (mW)} / (I_{(32\text{mW})} - I_{(8\text{mW})})$
Beam divergence parallel to the junction	$\theta_{//}$	7	10	14	deg.	$P_O = 40 \text{ mW}$ , FWHM
Beam divergence perpendicular to the junction	$\theta_{\perp}$	18	22	32	deg.	$P_O = 40 \text{ mW}$ , FWHM
Asigmatism	$A_s$	—	5	—	$\mu\text{m}$	$P_O = 4 \text{ mW}$ , NA = 0.4
Lasing wavelength	$\lambda_p$	820	830	840	nm	$P_O = 40 \text{ mW}$
Monitor current	$I_s$	20	100	130	$\mu\text{A}$	$P_O = 4 \text{ mW}$ , $V_{R(\text{PD})} = 5 \text{ V}$

Typical Characteristic Curves



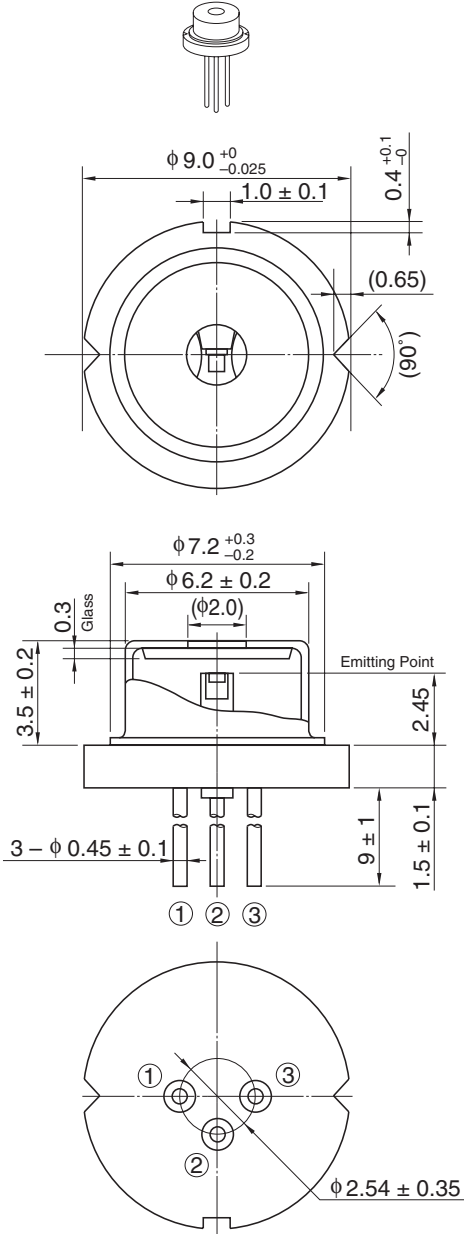
# HL8333G

## Typical Characteristic Curves (cont)



Package Dimensions

As of July, 2002  
Unit: mm



OPJ Code	LD/G2
JEDEC	—
JEITA	—
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.
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When disposing of the product, please follow the laws of your country and separate it from other waste such as industrial waste and household garbage.
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### Sales Offices



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