

# HL8333G

## GaAlAs Laser Diode

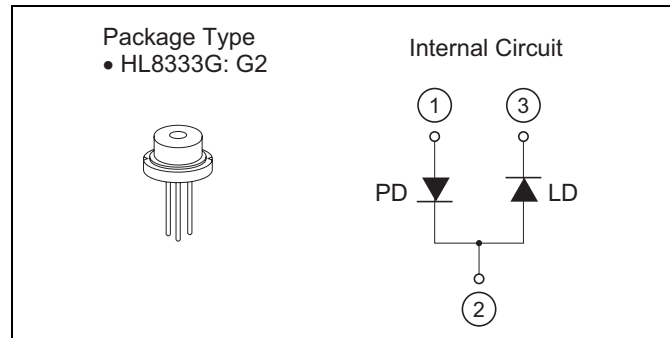
ODE-208-014C (Z)  
Rev.3  
Jun. 13, 2006

### Description

The HL8333G is a high-power 0.8  $\mu\text{m}$  band GaAlAs laser diode with a TQW (triple quantum well) structure. 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



### Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Optical output power	$P_O$	40	mW
Pulse optical output power	$P_{O(\text{pulse})}$	50 *	mW
LD reverse voltage	$V_{R(\text{LD})}$	2	V
PD 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	$^\circ\text{C}$

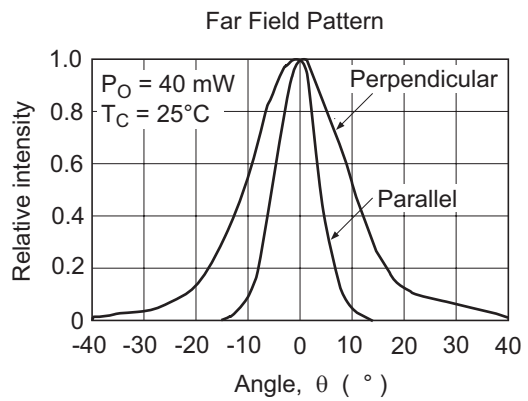
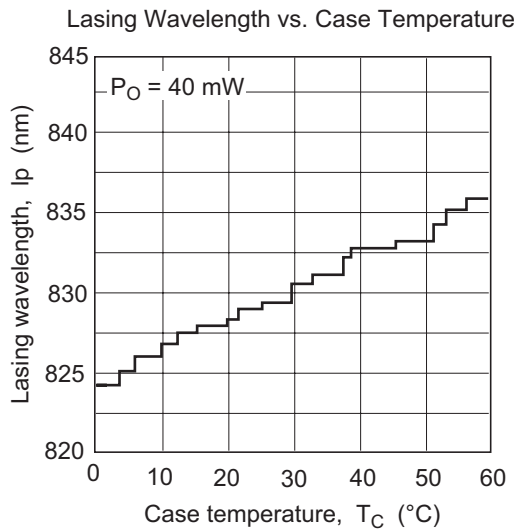
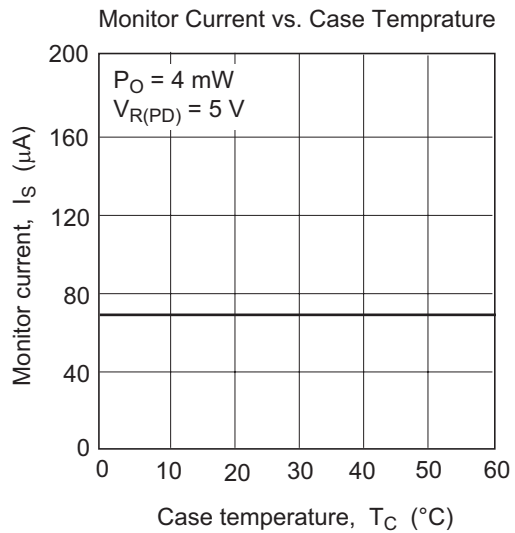
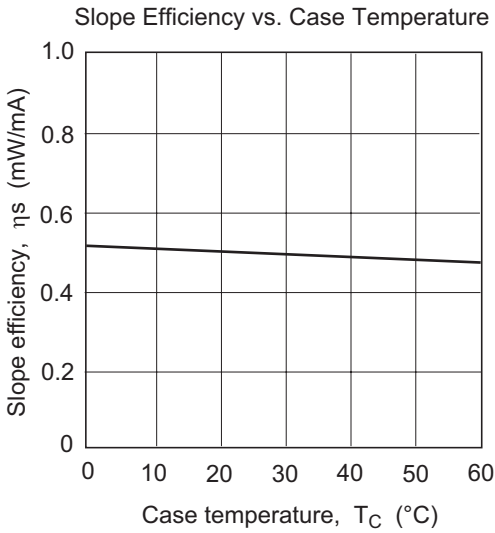
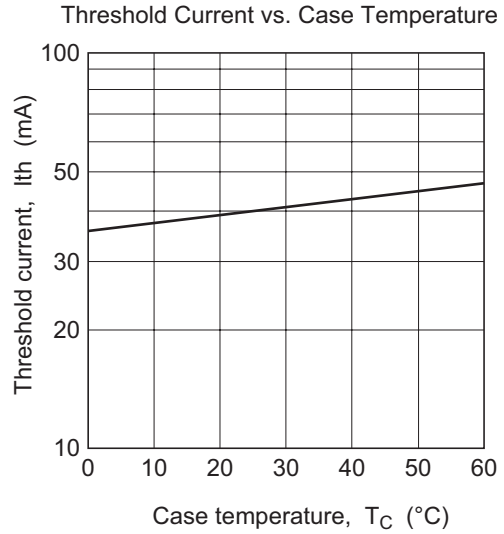
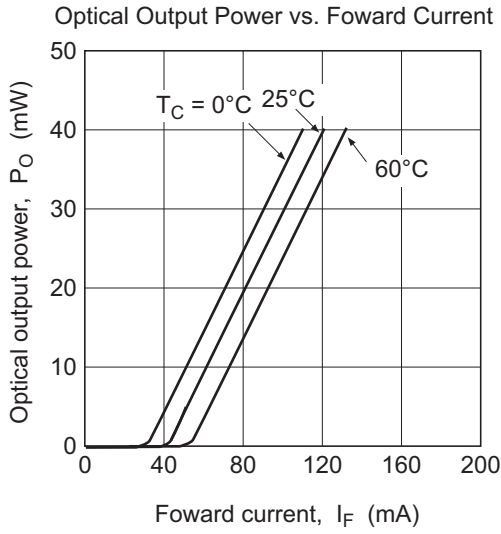
Note: Pulse condition : Pulse width = 1  $\mu\text{s}$ , duty = 50%

### Optical and Electrical Characteristics

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

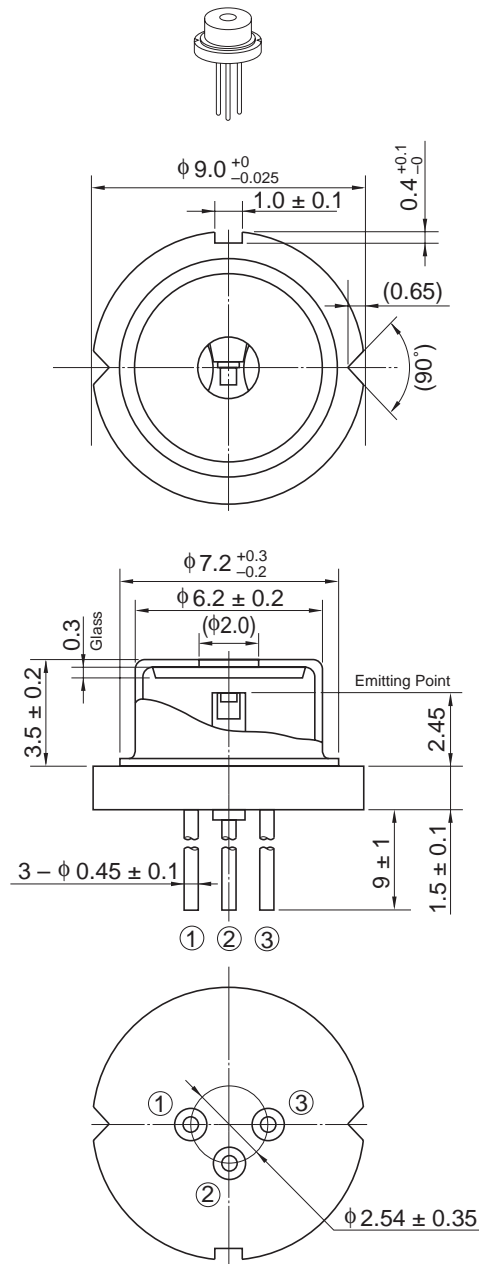
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	$I_{th}$	—	40	70	mA	—
Slope efficiency	$\eta_s$	0.4	0.5	0.9	mW/mA	$24 \text{ (mW)} / (I_{(32\text{mW})} - I_{(8\text{mW})})$
Operating current	$I_{OP}$	—	120	160	mA	$P_O = 40 \text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	7	10	14	$^\circ$	$P_O = 40 \text{ mW}$ , FWHM
Beam divergence perpendicular to the junction	$\theta_{\perp}$	18	22	32	$^\circ$	$P_O = 40 \text{ mW}$ , FWHM
Astigmatism	$A_s$	—	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



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.
2. This product contains gallium arsenide (GaAs), which may seriously endanger your health even at very low doses. Please avoid treatment which may create GaAs powder or gas, such as disassembly or performing chemical experiments, when you handle the product.  
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3. Definition of items shown in this CAS is in accordance with that shown in Opto Device Databook issued by OPJ unless otherwise specified.

## Sales Offices



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