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# HL6312G/13G

AlGaInP Laser Diodes



ODE-208-190I (Z)

Rev.9  
Mar. 2005

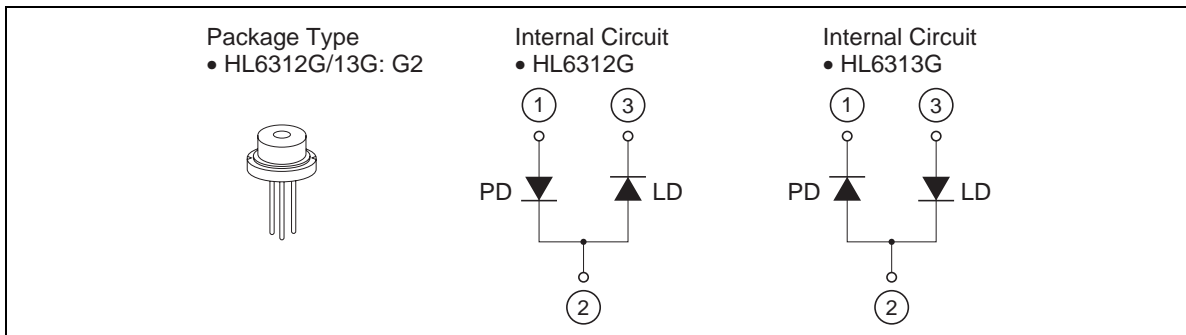
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## Description

The HL6312G/13G are 0.63  $\mu\text{m}$  band AlGaInP laser diodes with a multi-quantum well (MQW) structure. Wavelength is equal to He-Ne Gas laser. They are suitable as light sources in bar code readers, laser levelers and various other types of optical equipment. Hermetic sealing of the package achieves high reliability.

## Features

- Visible light output:  $\lambda_p = 635 \text{ nm Typ}$
- Single longitudinal mode
- Optical output power: 5 mW CW
- Low Operating voltage: 2.7 V Max
- Built-in photodiode for monitoring laser output
- TM mode oscillation



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## HL6312G/13G

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### Absolute Maximum Ratings

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

Item	Symbol	Rated Value	Unit
Optical output power	$P_O$	5	mW
Pulse optical output power	$P_{O(\text{pulse})}$	6 *	mW
LD reverse voltage	$V_{R(\text{LD})}$	2	V
PD reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	$T_{\text{opr}}$	-10 to +50	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-40 to +85	$^\circ\text{C}$

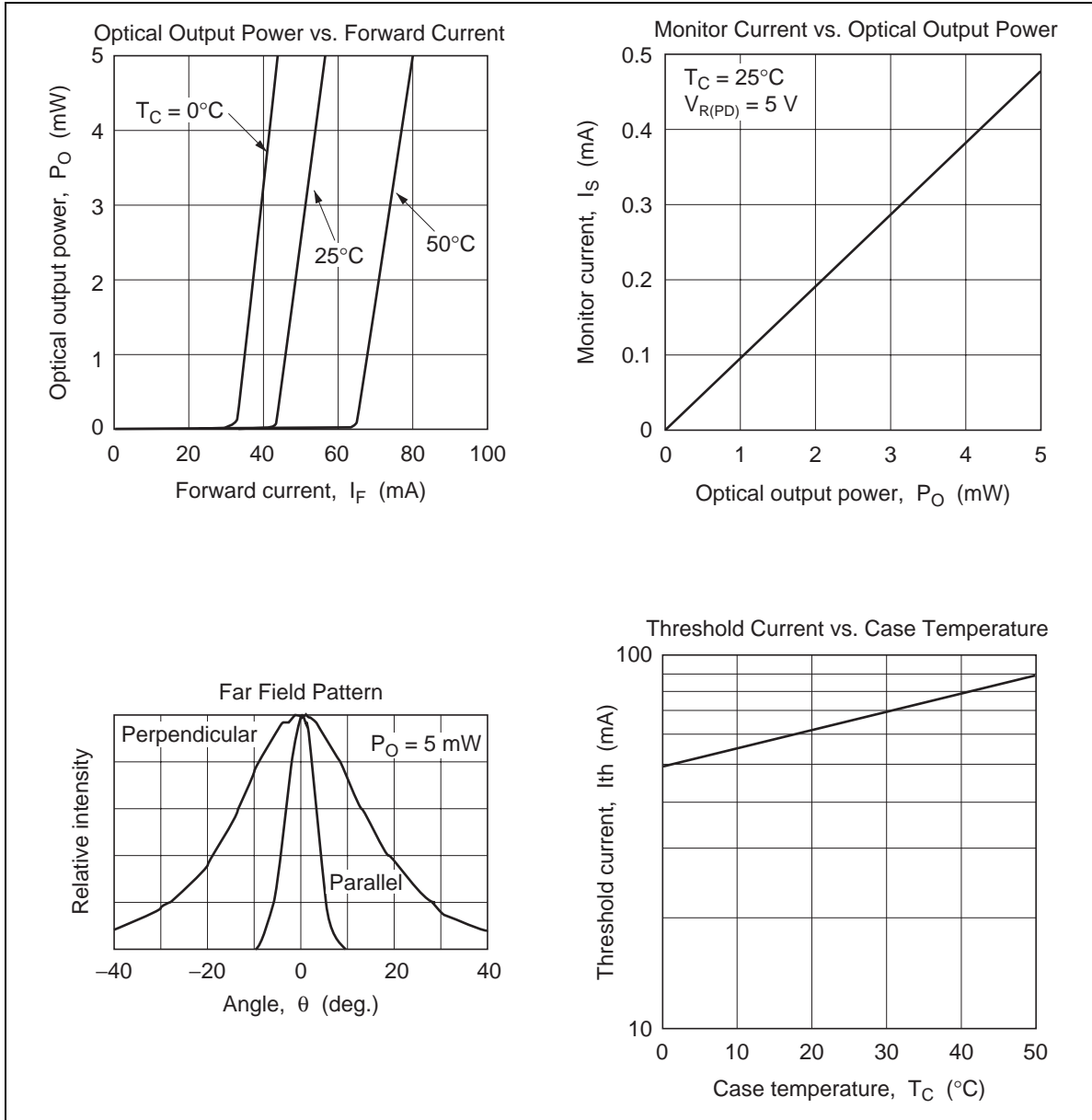
Note: Pulse condition : Pulse width  $\leq 1 \mu\text{s}$  , duty  $\leq 50\%$

### Optical and Electrical Characteristics

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

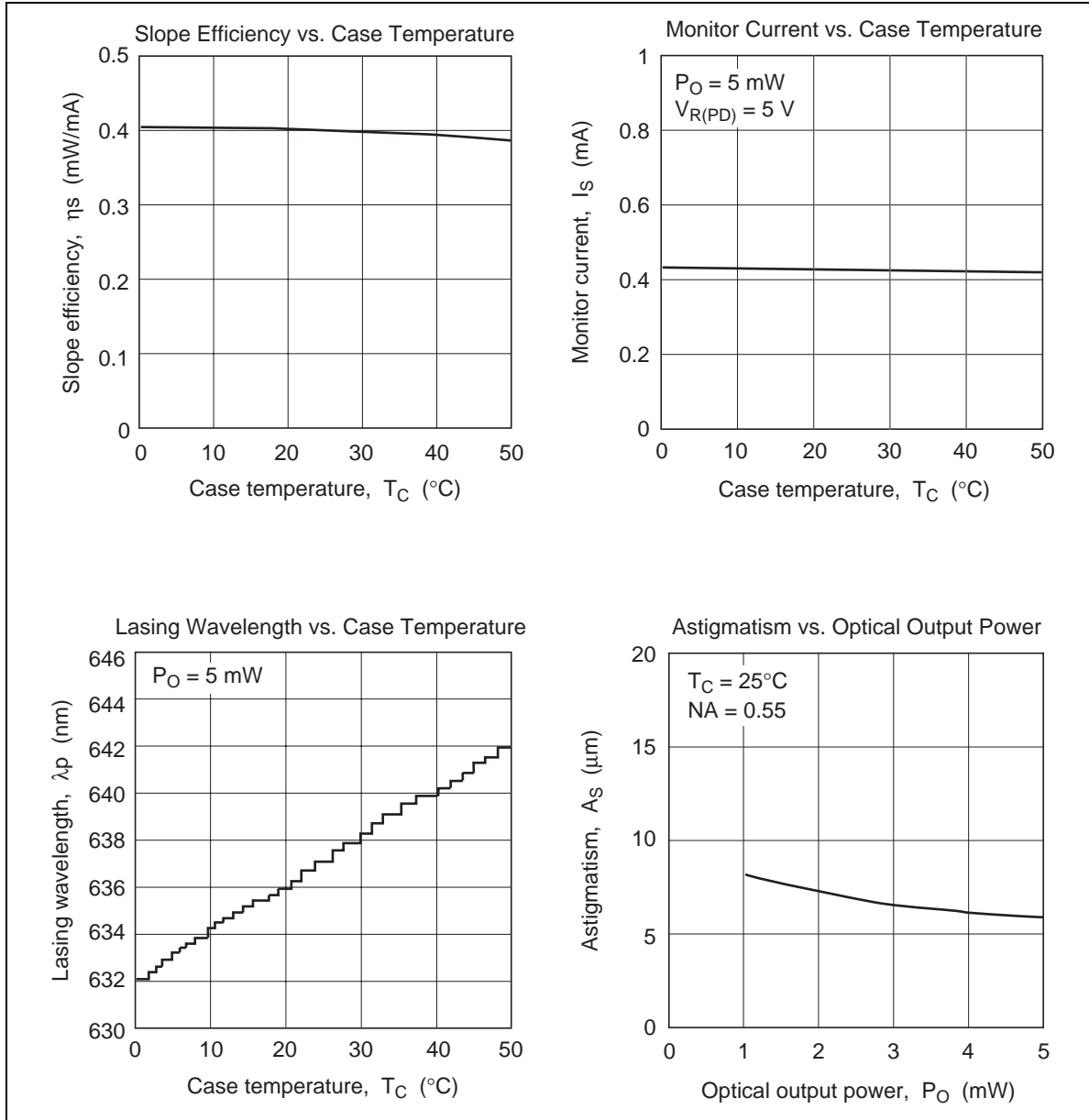
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	$P_O$	5	—	—	mW	—
Threshold current	$I_{\text{th}}$	20	45	70	mA	—
Operating current	$I_{\text{OP}}$	—	55	85	mA	$P_O = 5 \text{ mW}$
Operating voltage	$V_{\text{OP}}$	—	—	2.7	V	$P_O = 5 \text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	5	8	11	deg.	$P_O = 5 \text{ mW}$
Beam divergence perpendicular to the junction	$\theta_{\perp}$	25	31	37	deg.	$P_O = 5 \text{ mW}$
Astigmatism	$A_S$	—	8	—	$\mu\text{m}$	$P_O = 5 \text{ mW}$ , $\text{NA} = 0.55$
Lasing wavelength	$\lambda_p$	625	635	640	nm	$P_O = 5 \text{ mW}$
Monitor current	$I_S$	0.2	0.4	0.8	mA	$P_O = 5 \text{ mW}$ , $V_{R(\text{PD})} = 5 \text{ V}$

Typical Characteristic Curves

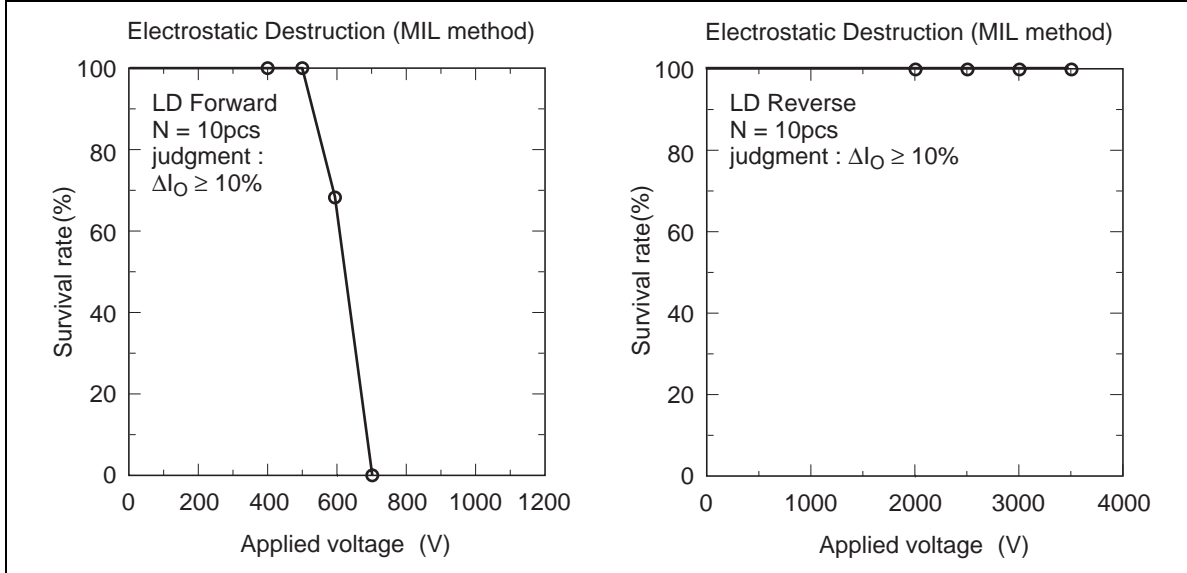


# HL6312G/13G

## Typical Characteristic Curves (cont)



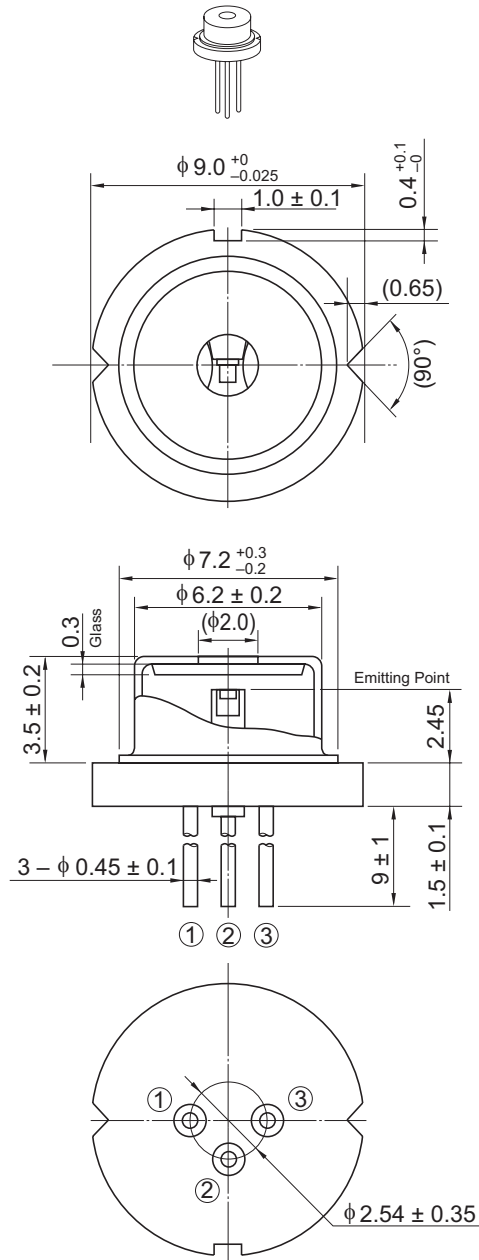
Typical Characteristic Curves (cont)



# HL6312G/13G

## 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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## Sales Offices



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