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# HL6322G

AlGaInP Laser Diode

# HITACHI

ADE-208-599B (Z)  
3rd Edition  
Aug. 1998

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## Description

The HL6322G are 0.63  $\mu\text{m}$  band AlGaInP laser diodes with a multi-quantum well (MQW) structure.

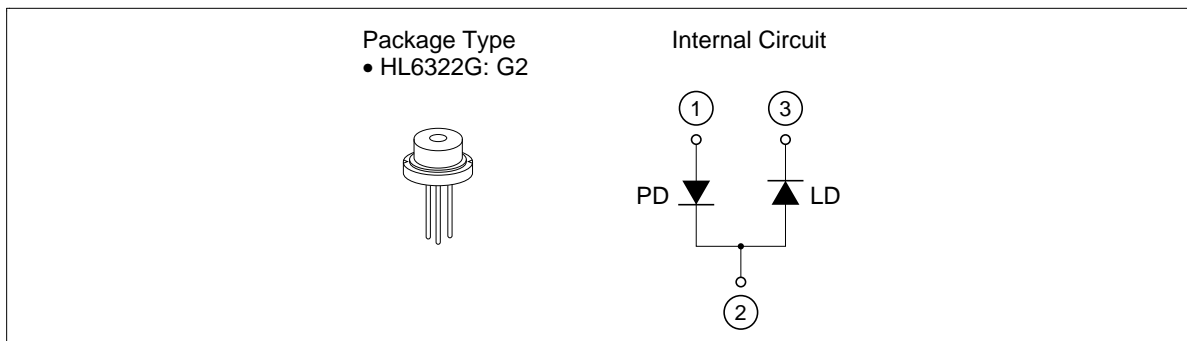
It is suitable as light sources for laser leveler and optical equipment for measurement.

## Application

- Laser leveler
- Measurement

## Features

- Visible light output : 635 nm Typ (nearly equal to He-Ne gas laser)
- Optical output power : 15 mW CW
- Low operating current : 100 mA Max
- Low operating voltage : 2.7 V Max



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### Absolute Maximum Ratings ( $T_C = 25^\circ\text{C}$ )

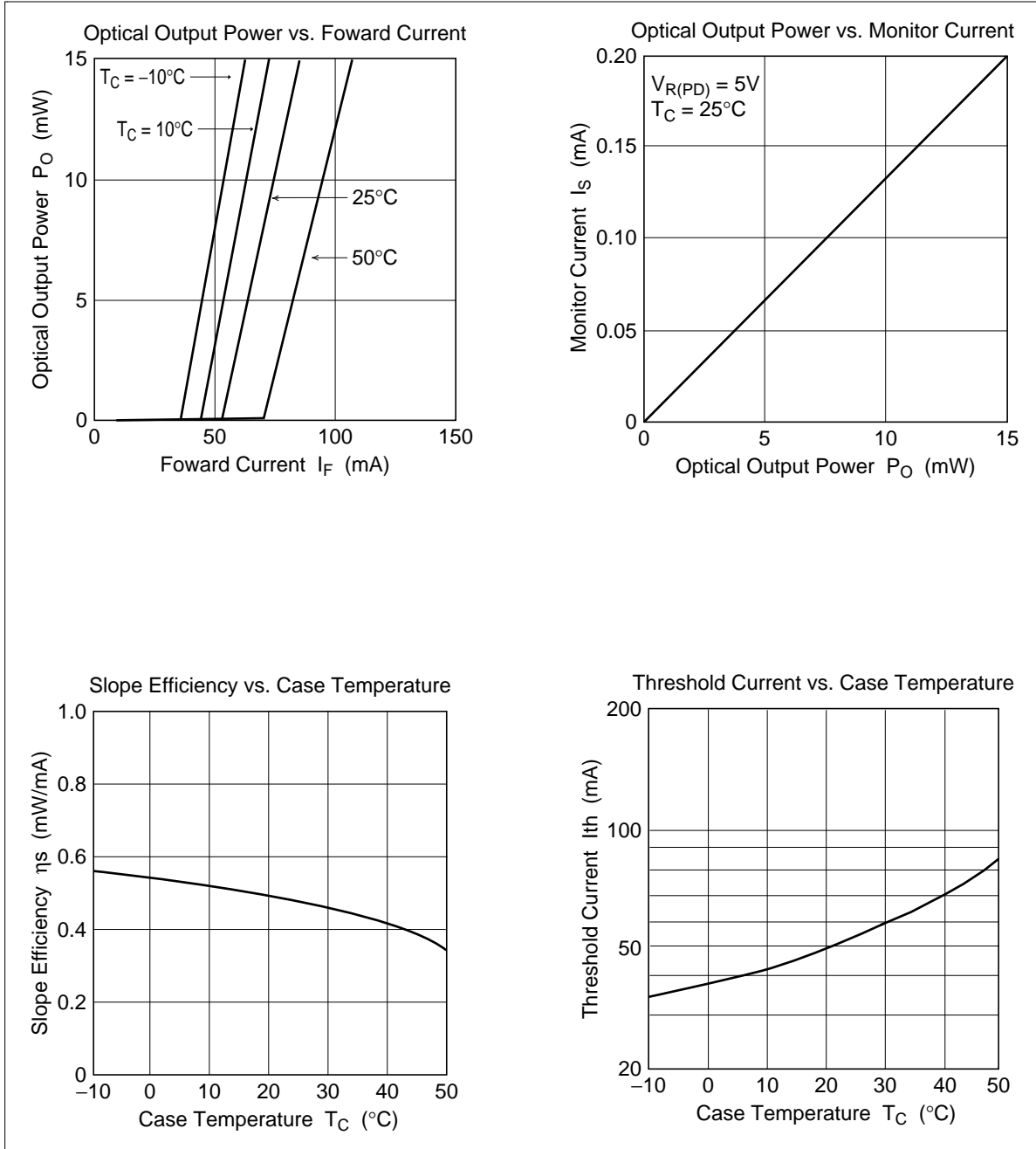
Item	Symbol	Value	Unit
Optical output power	$P_O$	15	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	$T_{opr}$	-10 to +50	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +85	$^\circ\text{C}$

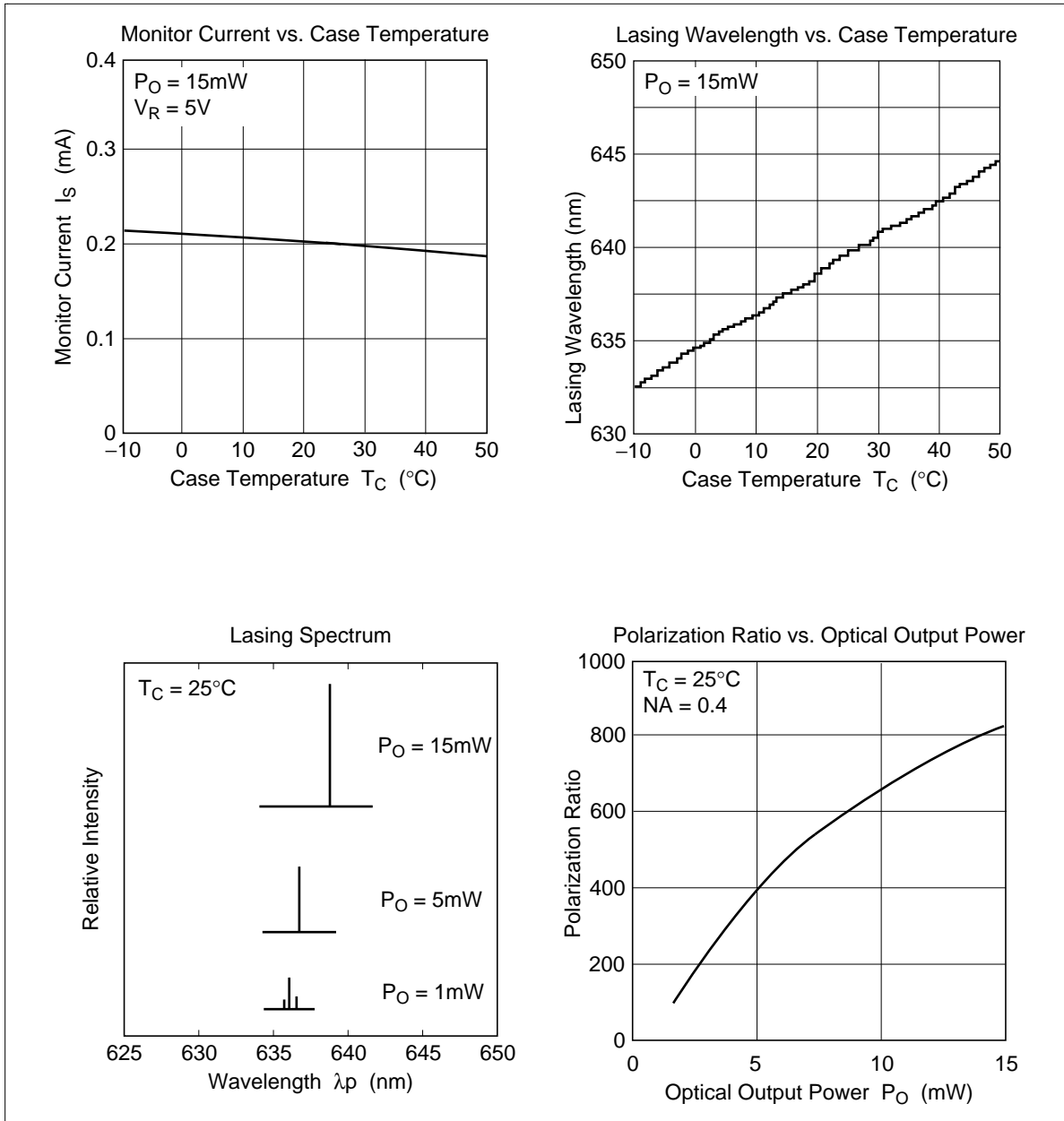
### Optical and Electrical Characteristics ( $T_C = 25^\circ\text{C}$ )

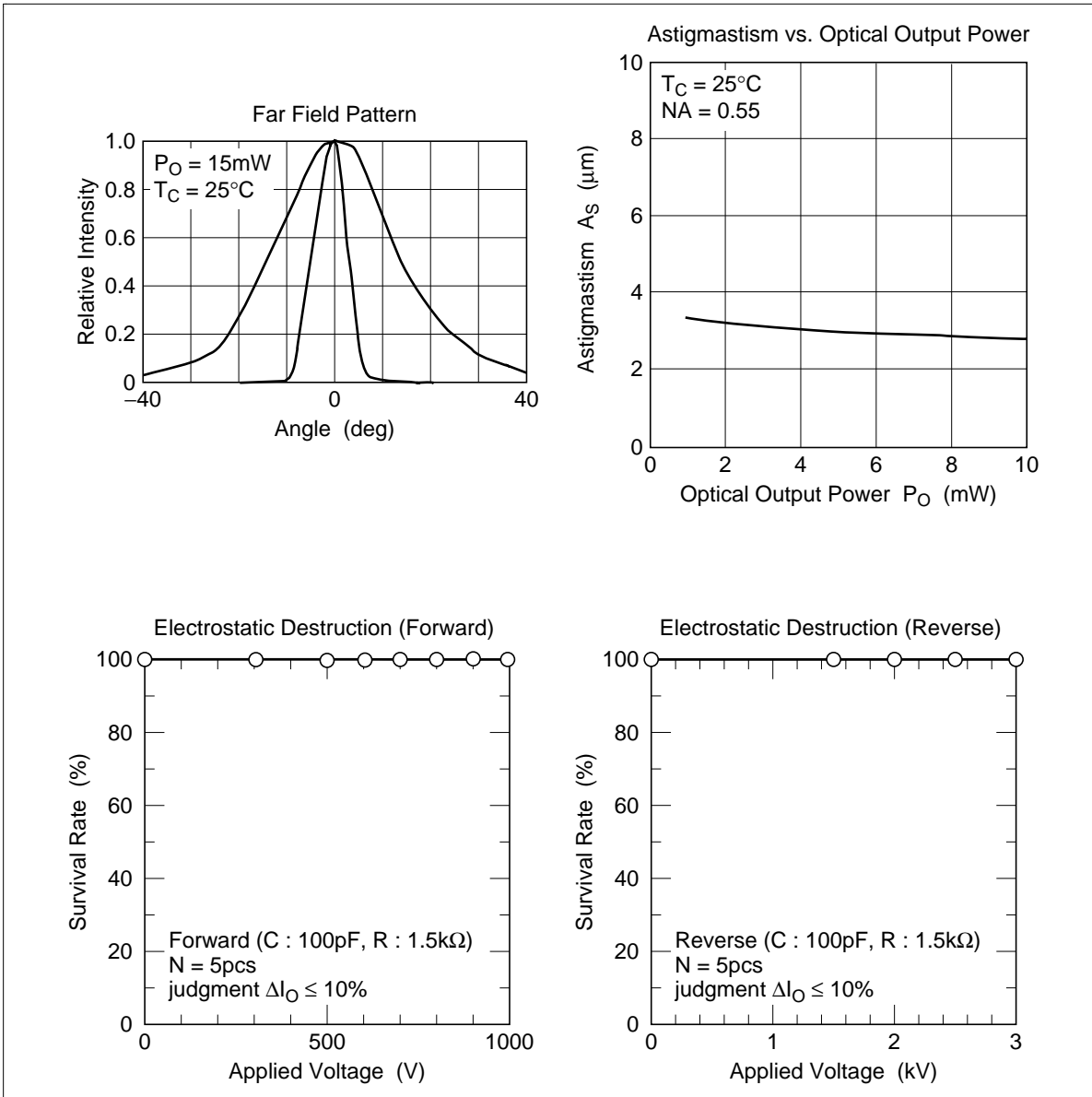
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Optical output power	$P_O$	15	—	—	mW	Kink free*
Threshold current	$I_{th}$	20	55	70	mA	
Operating current	$I_{op}$	—	85	100	mA	$P_O = 15\text{ mW}$
Operating voltage	$V_{OP}$	—	—	2.7	V	$P_O = 15\text{ mW}$
Slope efficiency	$\eta_s$	0.3	0.5	0.7	mW/mA	$9(\text{mW}) / (I_{(12\text{mW})} - I_{(3\text{mW})})$
Lasing wavelength	$\lambda_p$	630	635	640	nm	$P_O = 15\text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	6	8	11	deg.	$P_O = 15\text{ mW}$
Beam divergence perpendicular to the junction	$\theta_{\perp}$	25	30	36	deg.	$P_O = 15\text{ mW}$
Monitor current	$I_s$	0.1	0.2	0.4	mA	$P_O = 15\text{ mW}, V_{R(PD)} = 5\text{V}$

Note: Kink free is confirmed at the temperature of  $25^\circ\text{C}$ .

Typical Characteristics Curves





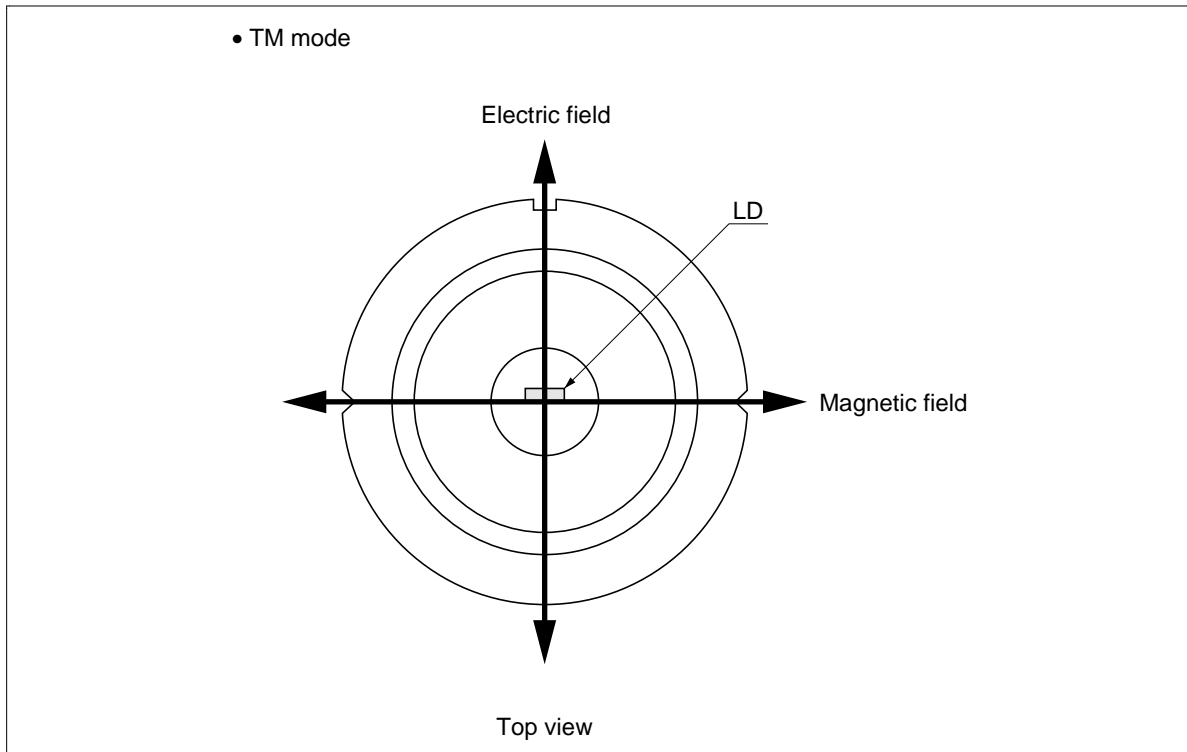


**Polarization direction**

The polarization direction is TM mode.

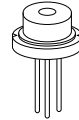
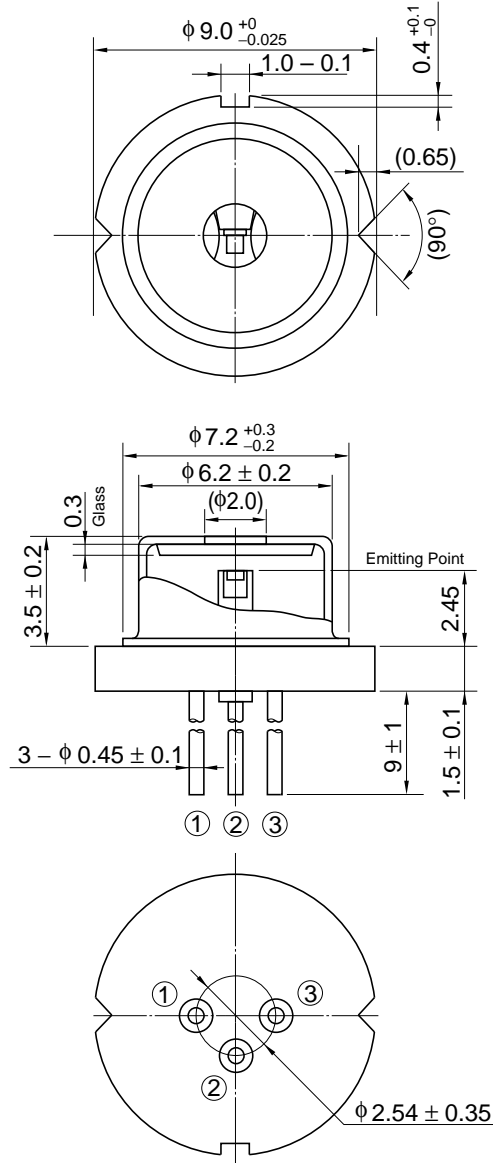
The polarization direction of 0.63  $\mu\text{m}$  LDs is different from that 0.83/0.78/0.67  $\mu\text{m}$  LDs.

The polarization direction of 0.63  $\mu\text{m}$  LDs is illustrated in the figure below.



Package Dimensions

Unit: mm



Hitachi Code	LD/G2
JEDEC	—
EIAJ	—
Weight (reference value)	1.1 g

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1. The laser light is harmful to human body especially the eye no matter how directly or indirectly. The laser beam shall be observed or adjusted through infrared camera or equivalent.

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