

HL6331/32G

Low Operating Current Visible Laser Diode

HITACHI

ADE-208-819 (Z)
Target Specification
1st Edition
Sep. 1999

Description

The HL6331/32G are 0.63 μm band AlGaInP 10mW laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser levelers, laser scanners and optical equipment for measurement.

Application

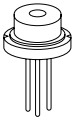
- Laser leveler
- Laser scanner
- Measurement

Features

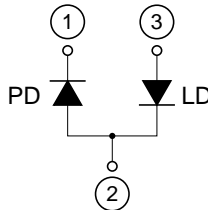
- Visible light output : 635 nm Typ
- Optical output power : 10 mW CW
- Low operating current : 55 mA Typ
- Low operating voltage : 2.4 V Max
- Operating temperature : +60°C
- TM mode oscillation

Internal Circuit

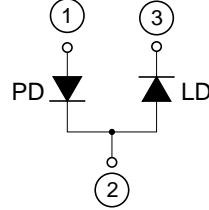
Package Type
• HL6331/32G: G2



Internal Circuit
• HL6331G



Internal Circuit
• HL6332G



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

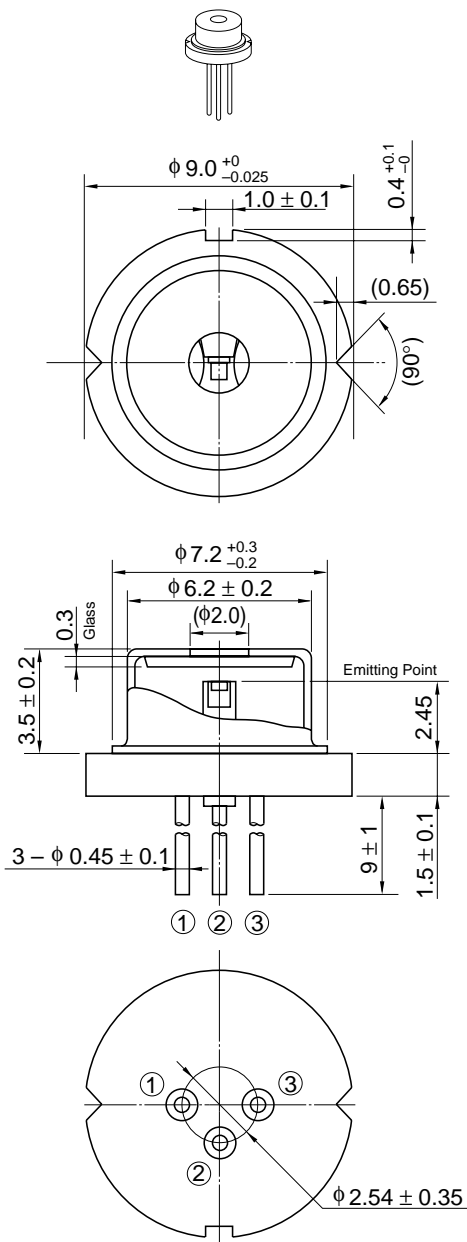
Item	Symbol	Value	Unit
Optical output power	P_o	10	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{opr}	-10 to +60	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

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

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Optical output power	P_o	10	—	—	mW	Kink free
Threshold current	I_{th}	—	40	60	mA	
Operating current	I_{op}	—	55	75	mA	$P_o = 10 \text{ mW}$
Operating voltage	V_{OP}	—	2.2	2.4	V	$P_o = 10 \text{ mW}$
Slope efficiency	η_s	0.3	0.6	0.9	mW/mA	$6(\text{mW}) / (I_{(8\text{mW})} - I_{(2\text{mW})})$
Lasing wavelength	λ_p	630	635	640	nm	$P_o = 10 \text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	6	8	11	deg.	$P_o = 10 \text{ mW}$
Beam divergence perpendicular to the junction	θ_{\perp}	25	31	36	deg.	$P_o = 10 \text{ mW}$
Monitor current	I_s	—	0.18	—	mA	$P_o = 10 \text{ mW}, V_{R(PD)} = 5\text{V}$

Package Dimensions

Unit: mm



Hitachi Code	LD/G2
JEDEC	—
EIAJ	—
Weight (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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