
HL6321/22G

AlGaInP Laser Diodes

HITACHI

Description

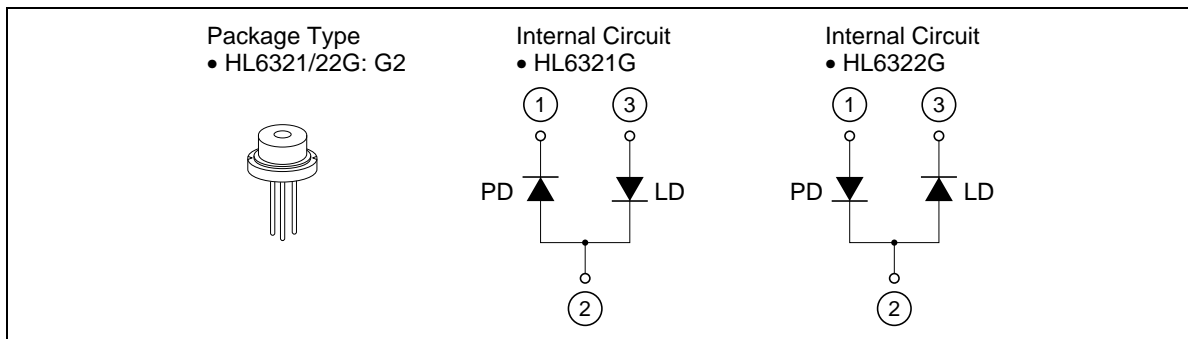
The HL6321/22G are 0.63 μm band AlGaInP laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser levelers and optical equipment for measurement.

Application

- Laser levelers
- Measurement

Features

- Visible light output: 635nm Typ (nearly equal to He-Ne gas laser)
- Optical output power: 15 mW CW
- Low operating current: 105 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 Conditions
Optical output power	P_o	15	—	—	mW	Kink free
Threshold current	I_{th}	20	—	75	mA	
Operating current	I_{OP}	—	—	105	mA	$P_o = 15 \text{ mW}$
Operating voltage	V_{OP}	—	—	2.7	V	$P_o = 15 \text{ mW}$
Slope efficiency	η_s	0.3	—	0.7	mW/mA	$9(\text{mW})/(I(12\text{mW})-I(3\text{mW}))$
Lasing wavelength	λ_p	625	635	642	nm	$P_o = 15 \text{ mW}$
Beam divergence (parallel)	$\theta_{//}$	5	8	11	deg.	$P_o = 15 \text{ mW}$
Beam divergence (perpendicular)	θ_{\perp}	24	30	36	deg.	$P_o = 15 \text{ mW}$
Monitor current	I_s	0.07	0.26	0.45	mA	$P_o = 15 \text{ mW}, V_{R(PD)} = 5 \text{ V}$

Polarization direction

The polarization direction is TM mode. The polarization of 0.63 μm LD's is different from that of 0.83/0.78/0.67 μm LD's. The polarization direction of 0.63 μm LD's is illustrated in the figure below.

