
HL6314MG

AlGaInP Laser Diode

HITACHI

Description

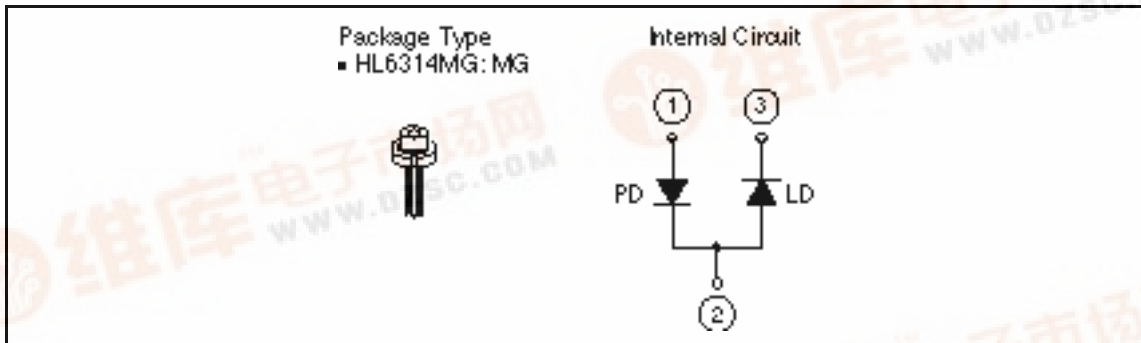
The HL6314MG is a 0.63 μm band AlGaInP laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source for laser pointers and optical equipment for amusement.

Application

- Laser pointer

Features

- Visible light output: 635nm Typ (nearly equal to He-Ne gas laser)
- Optical output power: 3 mW CW
- Low operating current: 30 mA Typ
- Low operating voltage: 2.7 V Max



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

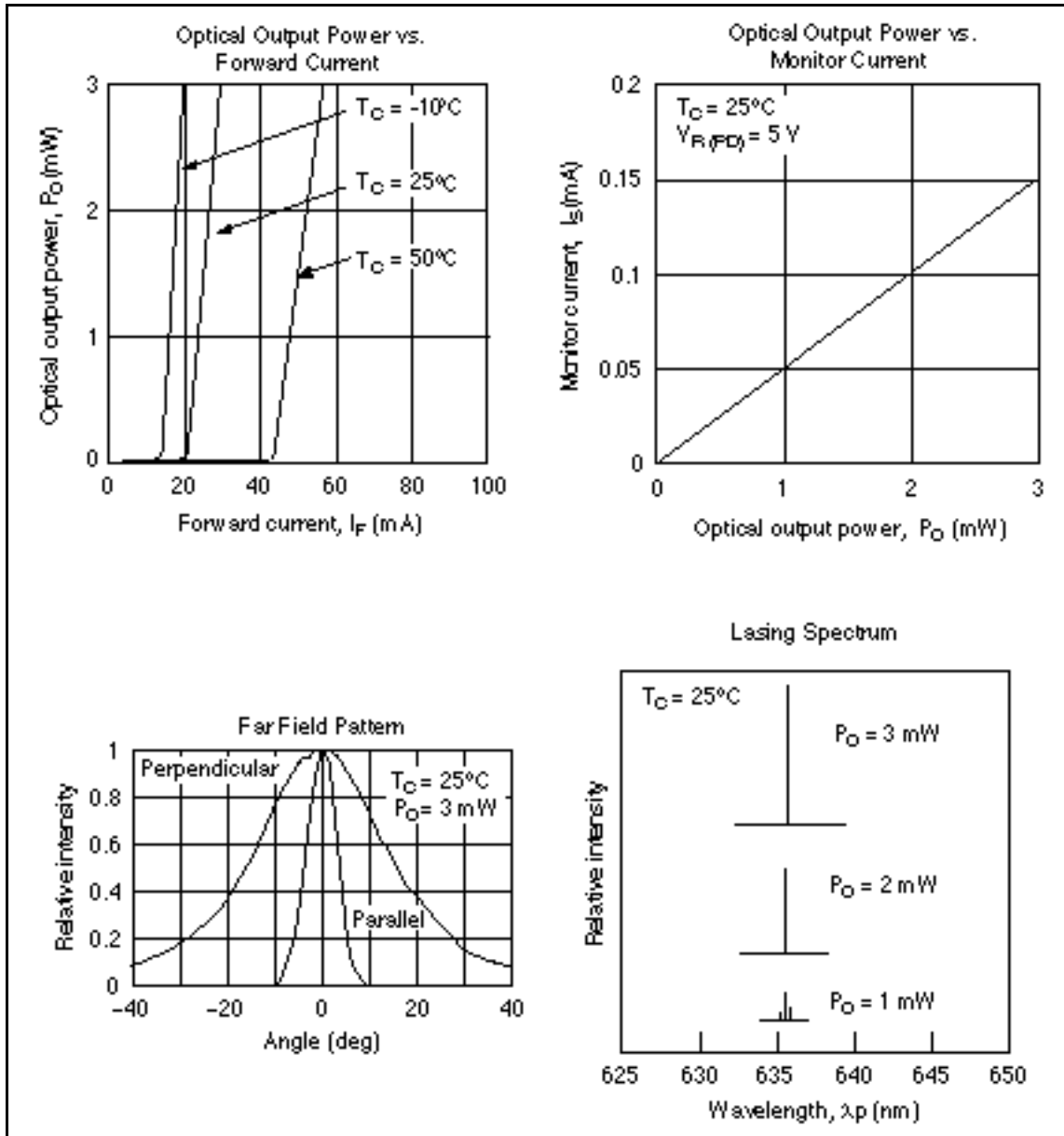
Item	Symbol	Rated Value	Unit
Optical output power	P_O	3	mW
Pulse optical output power	$P_{O(\text{pulse})}$	5* ¹	mW
LD reverse voltage	$V_{R(\text{LD})}$	2	V
PD reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	T_{opr}	-10 to +50	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

Note: 1. Pulse condition: Pulse width 1 μs , duty 50%

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

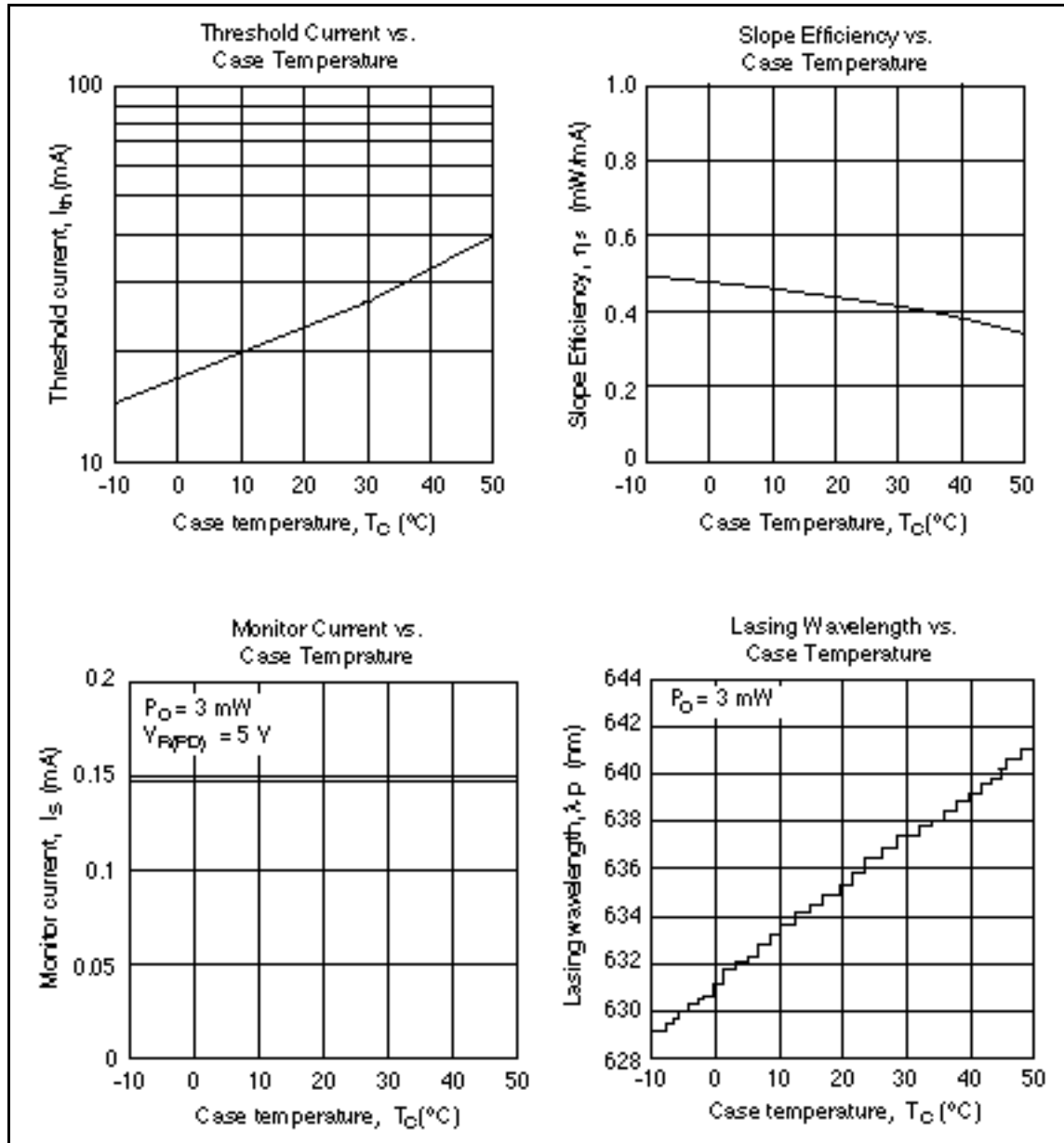
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	3	—	—	mW	Kink free
Threshold current	I_{th}	—	25	35	mA	
Operating current	I_{op}	—	30	42	mA	$P_O = 3\text{ mW}$
Operating voltage	V_{op}	—	—	2.7	V	$P_O = 3\text{ mW}$
Lasing wavelength	ρ	630	635	640	nm	$P_O = 3\text{ mW}$
Beam divergence (parallel)	//	6	8	10	deg.	$P_O = 3\text{ mW}$
Beam divergence (perpendicular)		23	30	39	deg.	$P_O = 3\text{ mW}$
Monitor current	I_s	0.08	0.15	0.4	mA	$P_O = 3\text{ mW}, V_{R(\text{PD})} = 5\text{ V}$

Typical Characteristic Curves

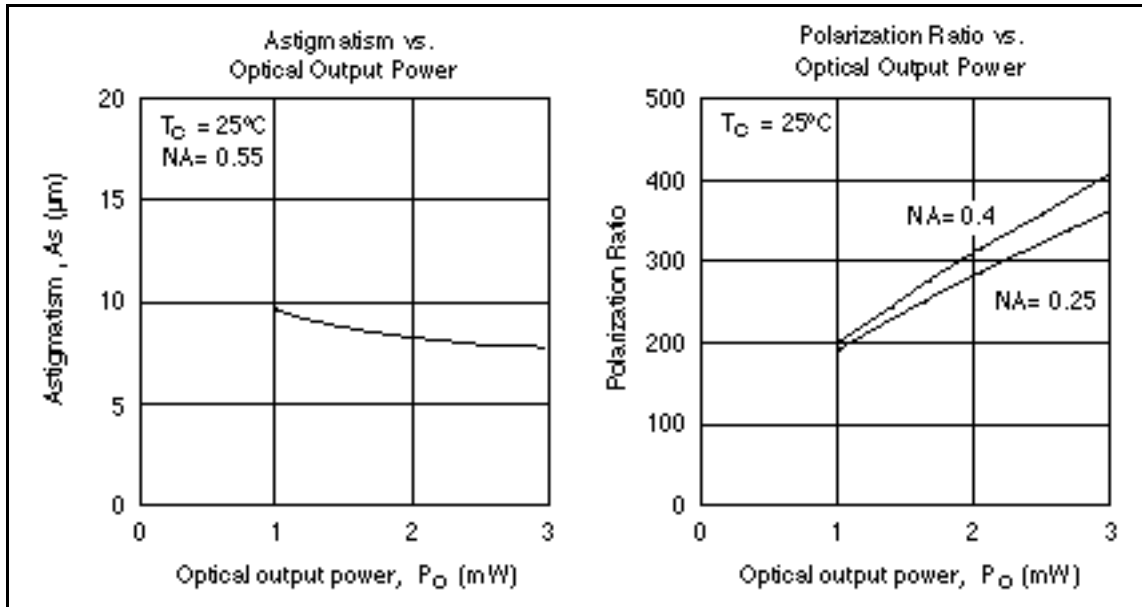


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Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)



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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

