HL6314MG

AlGaInP Laser Diode

HITACHI

Description

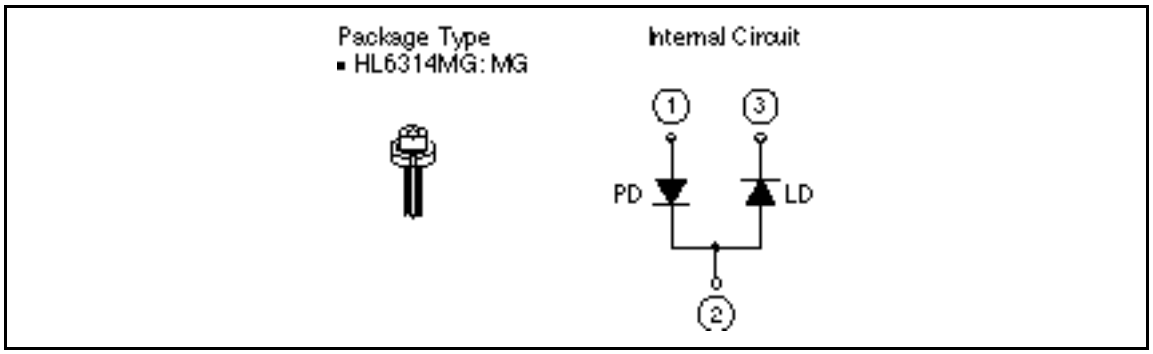
The HL6314MG is a 0.63 µm band AlGaInP laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source for laser poiters and optical equipment for amusement.

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



Absolute Maximum Ratings (T_C = 25°C)

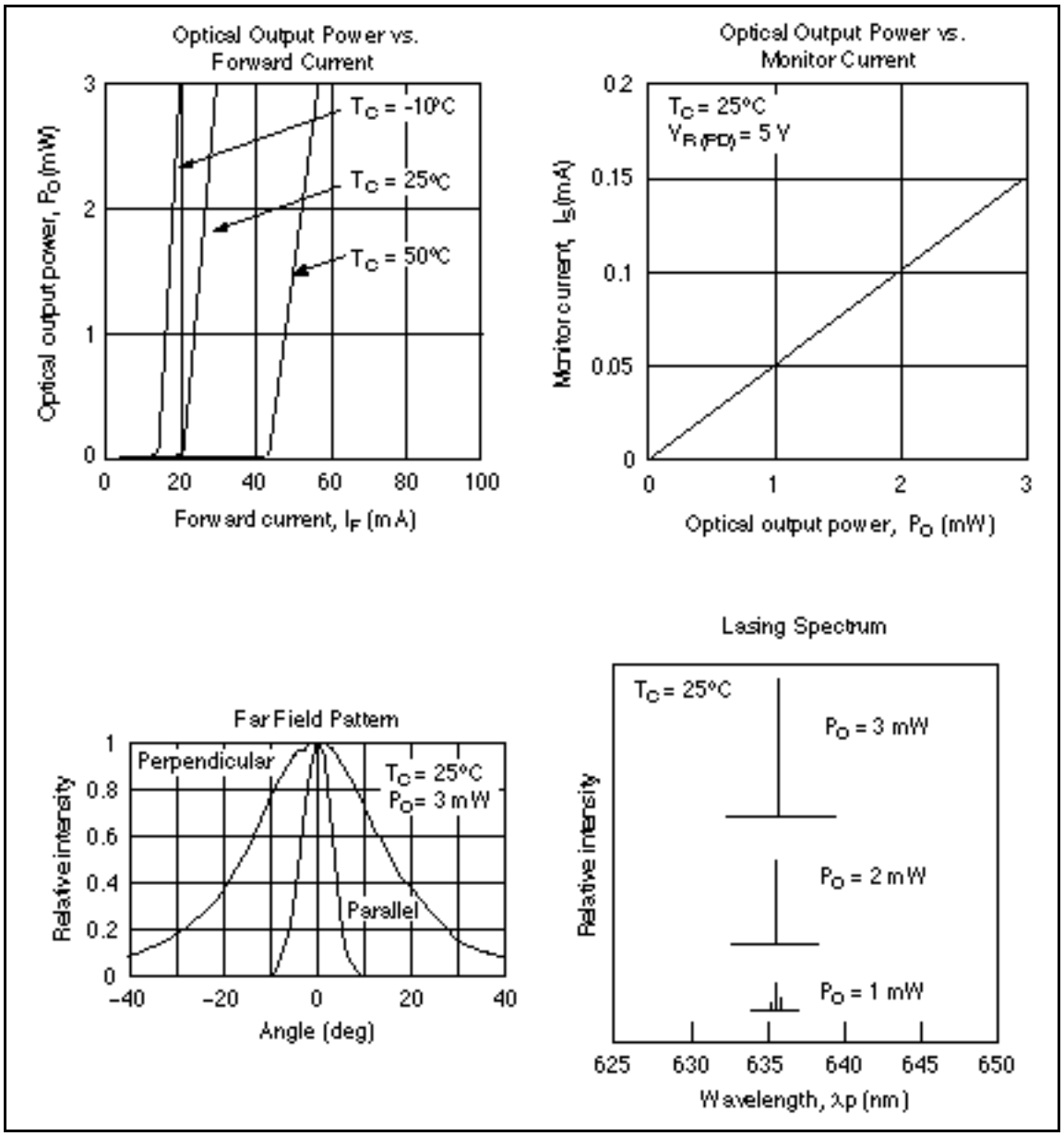
Item	Symbol	Rated Value	Unit
Optical output power	P_O	3	mW
Pulse optical output power	$P_{O\ (pulse)}$	5*[1]	mW
LD reverse voltage	$V_{R\ (LD)}$	2	V
PD reverse voltage	$V_{R\ (PD)}$	30	V
Operating temperature	Topr	–10 to +50	°C
Storage temperature	Tstg	–40 to +85	°C

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

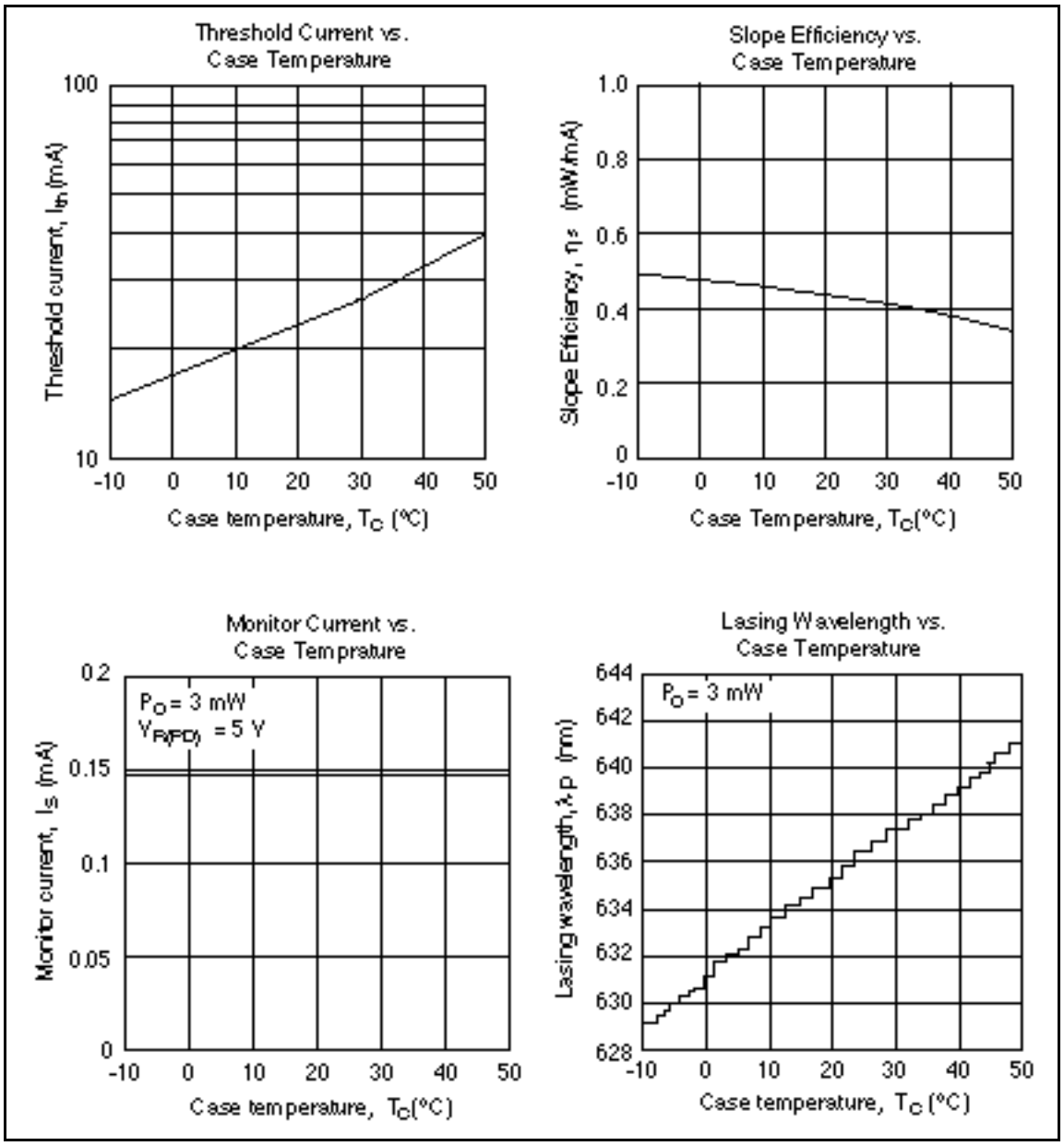
Optical and Electrical Characteristics (T_C = 25°C)

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

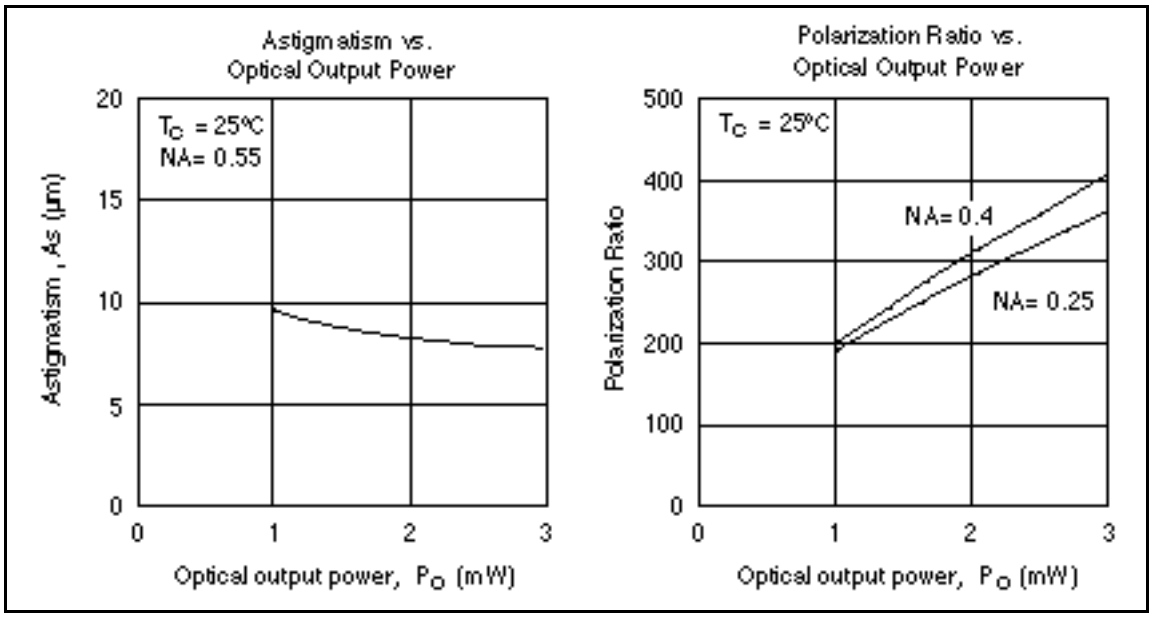
Typical Characteristic Curves



Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)



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