

HL6319/20G

AlGaInP Laser Diodes

HITACHI

Description

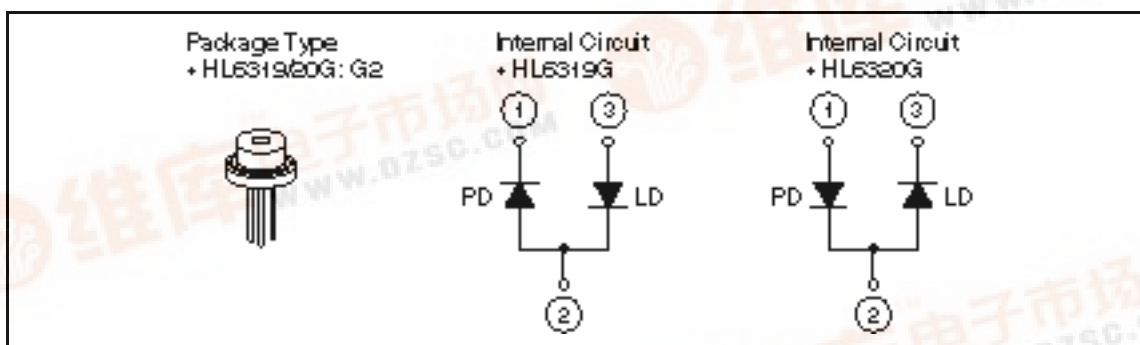
The HL6319/20G are 0.63 mm band AlGaInP laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser levelers and optical equipment for measurement.

Application

- Σ Laser levelers
- Σ Measurement

Features

- Σ Visible light output: 635nm Typ (nearly equal to He-Ne gas laser)
- Σ Optical output power: 10 mW CW
- Σ Low operating current: 95 mA Max
- Σ Low operating voltage: 2.7 V Max



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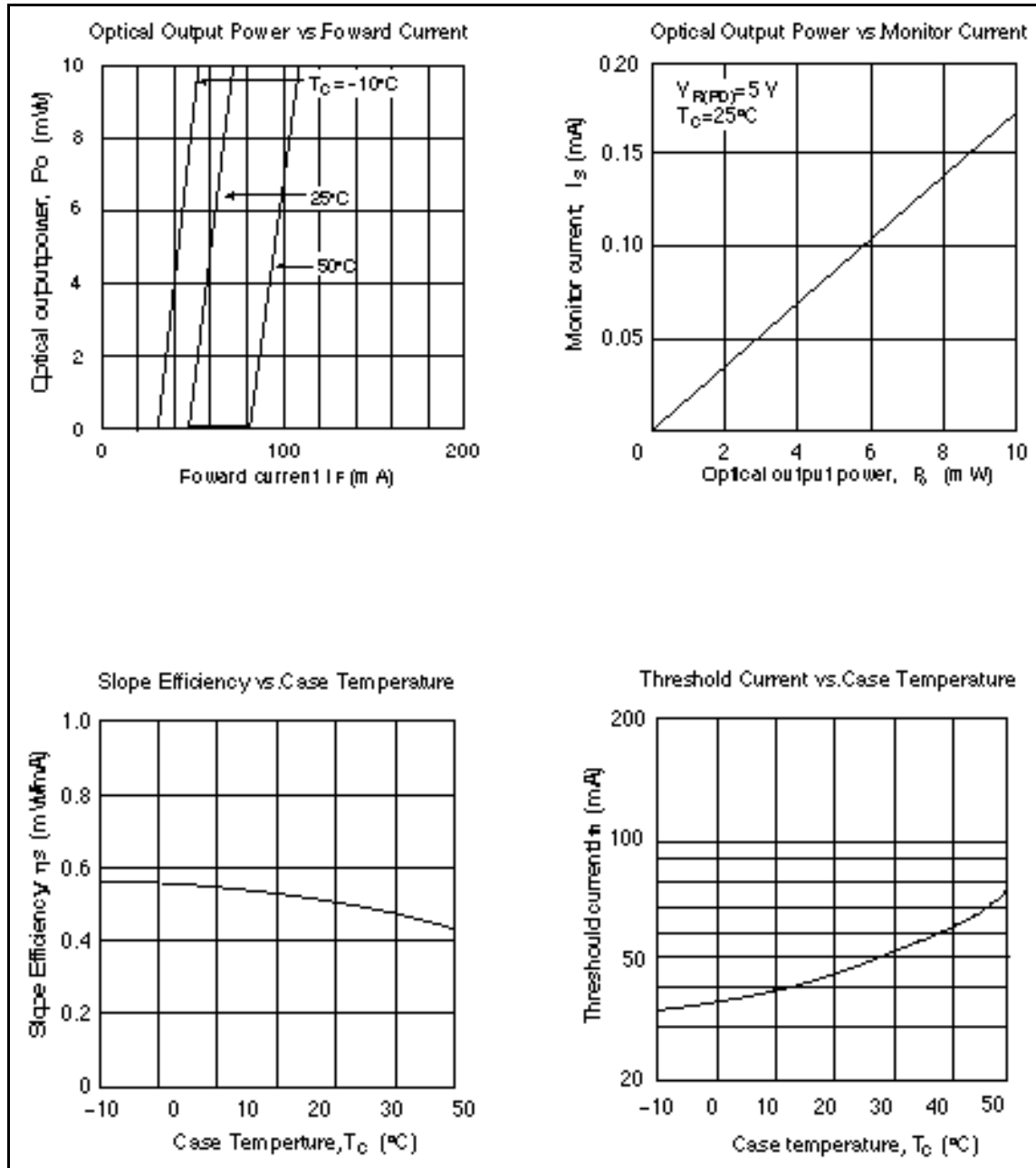
Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

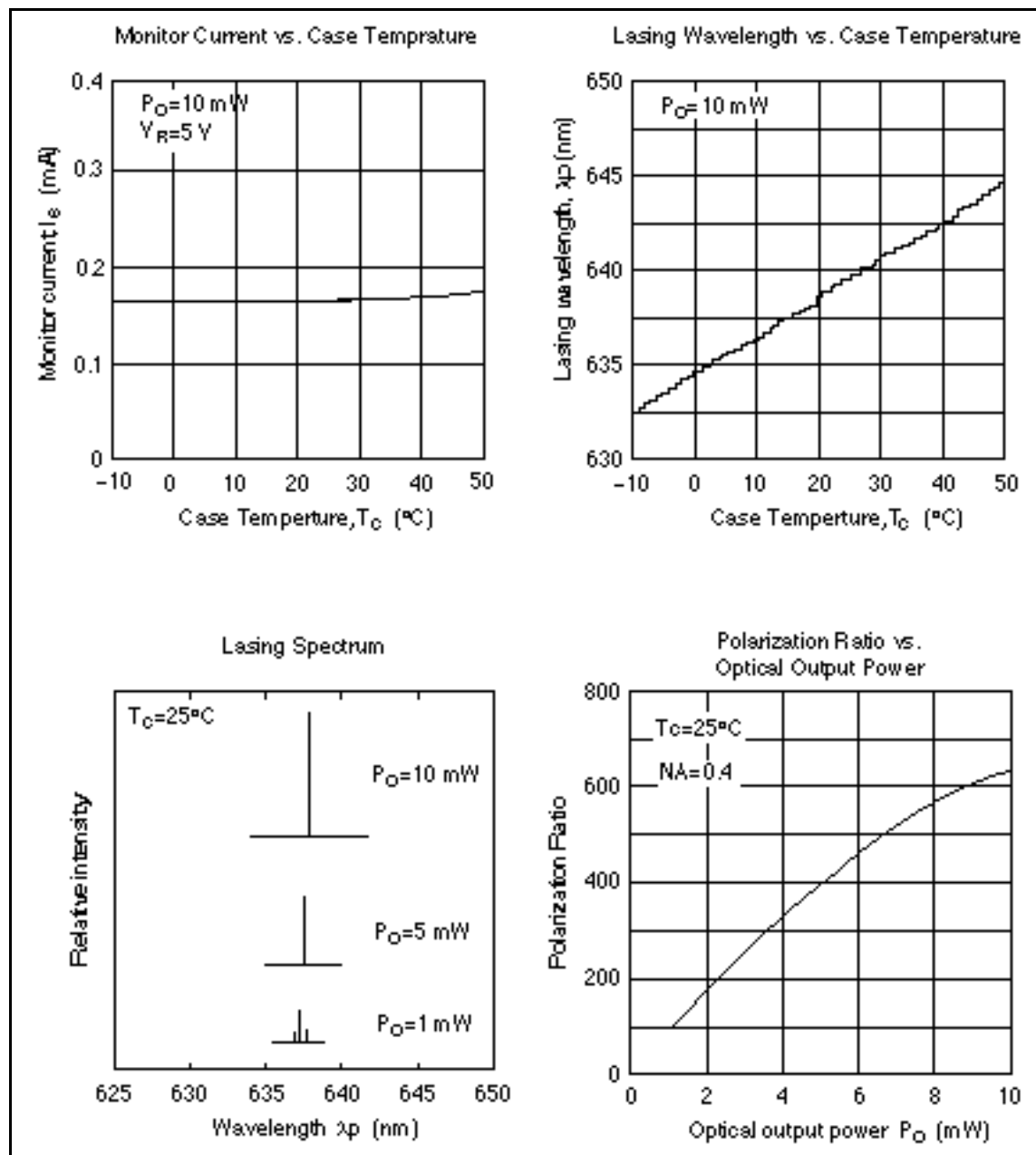
Item	Symbol	Value	Unit
Optical output power	P_O	10	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{opr}	-10 to +50	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

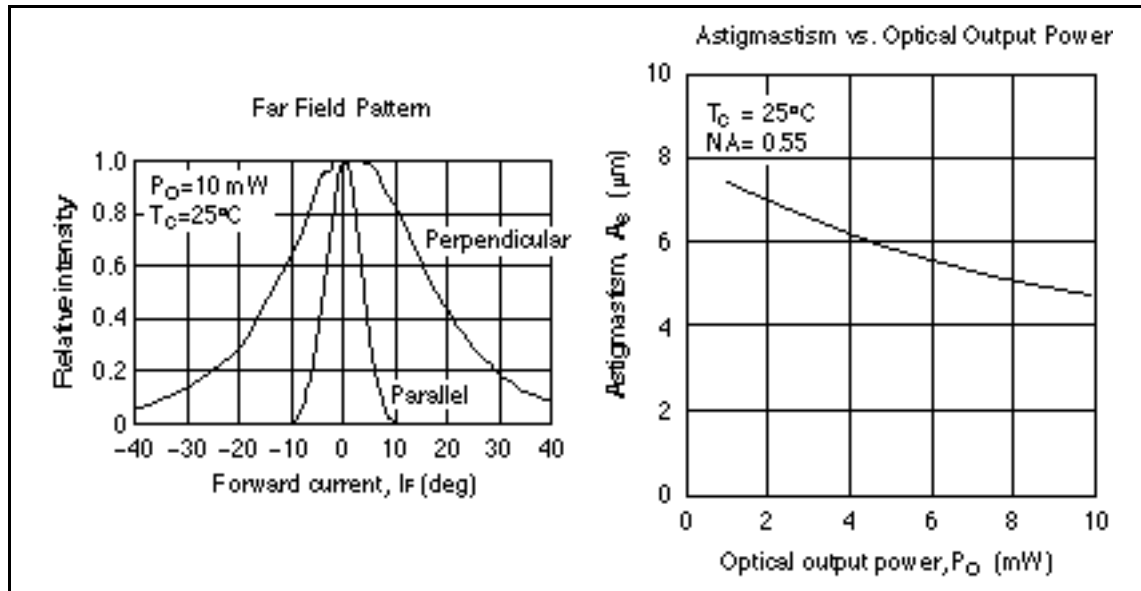
Optical and Electrical Characteristics ($T_C = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	10	—	—	mW	Kink free
Threshold current	I_{th}	20	50	75	mA	
Operating current	I_{OP}	—	70	95	mA	$P_O = 10 \text{ mW}$
Operating voltage	V_{OP}	—	—	2.7	V	$P_O = 10 \text{ mW}$
Slope efficiency	h_s	0.3	0.5	0.7	mW/mA	$6(\text{mW})/(I(8\text{mW}) - I(2\text{mW}))$
Lasing wavelength	λ_p	625	635	640	nm	$P_O = 10 \text{ mW}$
Beam divergence (parallel)	$q_{//}$	5	8	11	deg.	$P_O = 10 \text{ mW}$
Beam divergence (perpendicular)	$q^\perp$	25	31	37	deg.	$P_O = 10 \text{ mW}$
Monitor current	I_s	0.05	0.17	0.30	mA	$P_O = 10 \text{ mW}, V_{R(PD)} = 5 \text{ V}$

Typical Characteristics Curves







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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.

