
HL6319G/20G

AlGaInP Laser Diodes



ODE-208-479E (Z)

Rev.5
Jan. 2003

Description

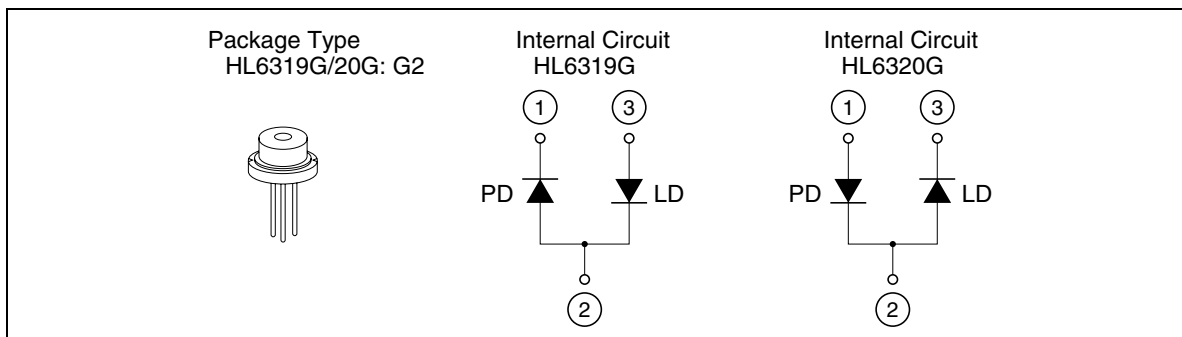
The HL6319G/20G are 0.63 μm band AlGaInP laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser levelers and optical equipment for measurement.

Application

- Laser levelers
- Measurement

Features

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



HL6319G/20G

Absolute Maximum Ratings

($T_c = 25^\circ\text{C}$)

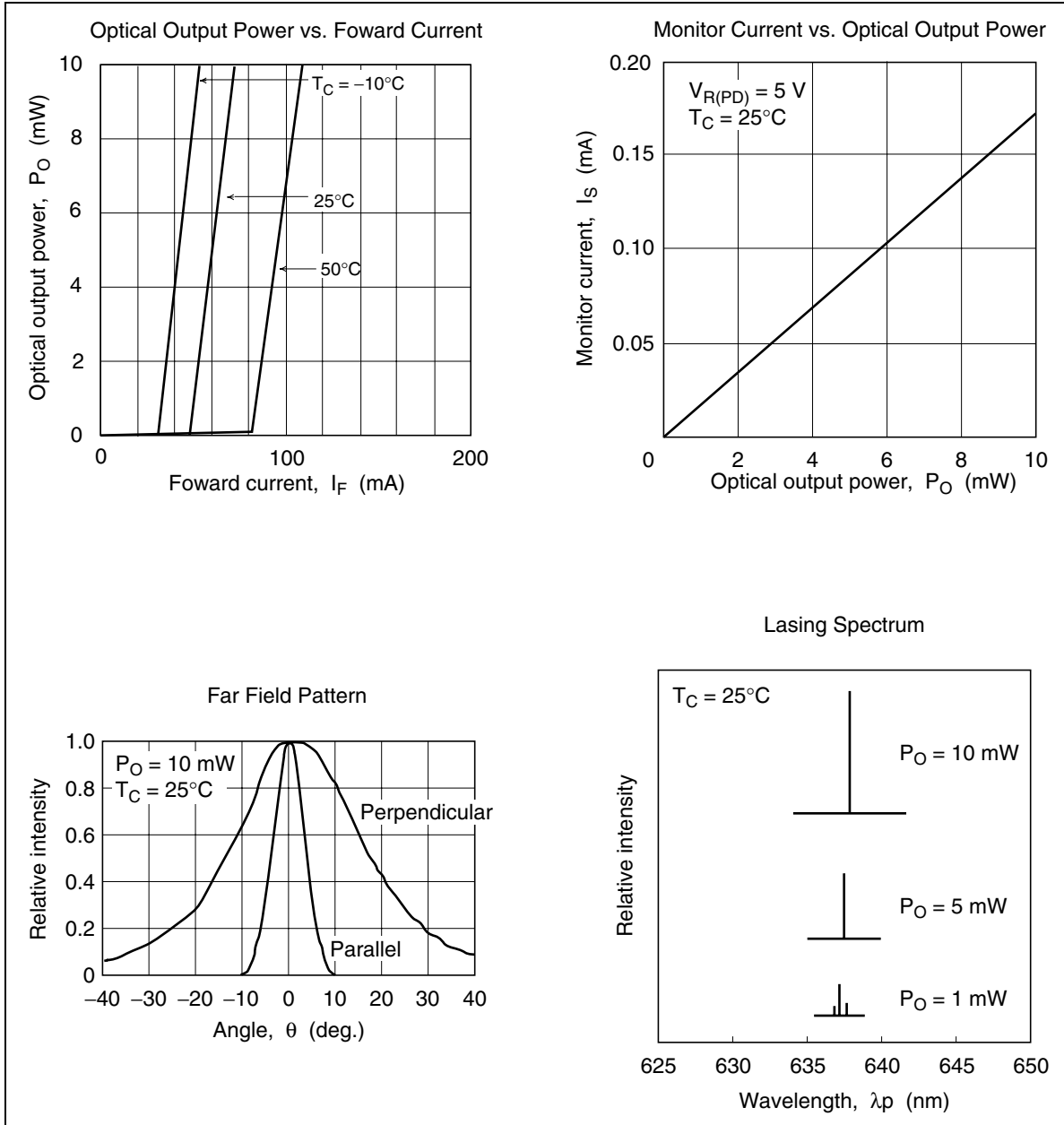
Item	Symbol	Rated Value	Unit
Optical output power	P_o	10	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{opr}	-10 to +50	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

Optical and Electrical Characteristics

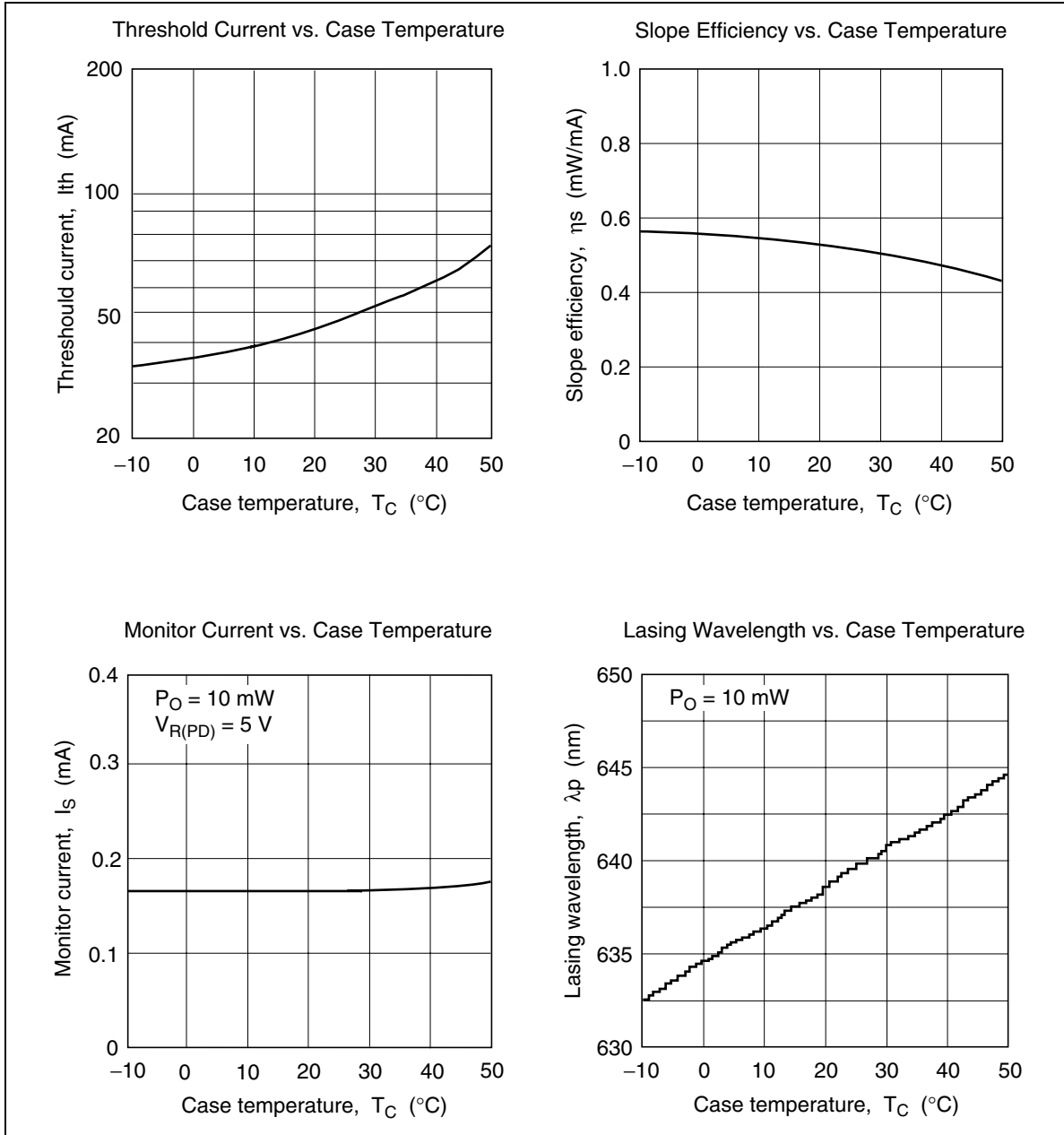
($T_c = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_o	10	—	—	mW	—
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	η_s	0.3	0.5	0.7	mW/mA	$6 \text{ (mW)} / (I_{(8\text{mW})} - I_{(2\text{mW})})$
Beam divergence parallel to the junction	$\theta_{//}$	5	8	11	deg.	$P_o = 10 \text{ mW}$
Beam divergence perpendicular to the junction	θ_{\perp}	25	31	37	deg.	$P_o = 10 \text{ mW}$
Astigmatism	A_s	—	5	—	μm	$P_o = 10 \text{ mW}$, $NA = 0.55$
Lasing wavelength	λ_p	625	635	640	nm	$P_o = 10 \text{ mW}$
Monitor current	I_s	0.05	0.17	0.30	mA	$P_o = 10 \text{ mW}$, $V_{R(PD)} = 5 \text{ V}$

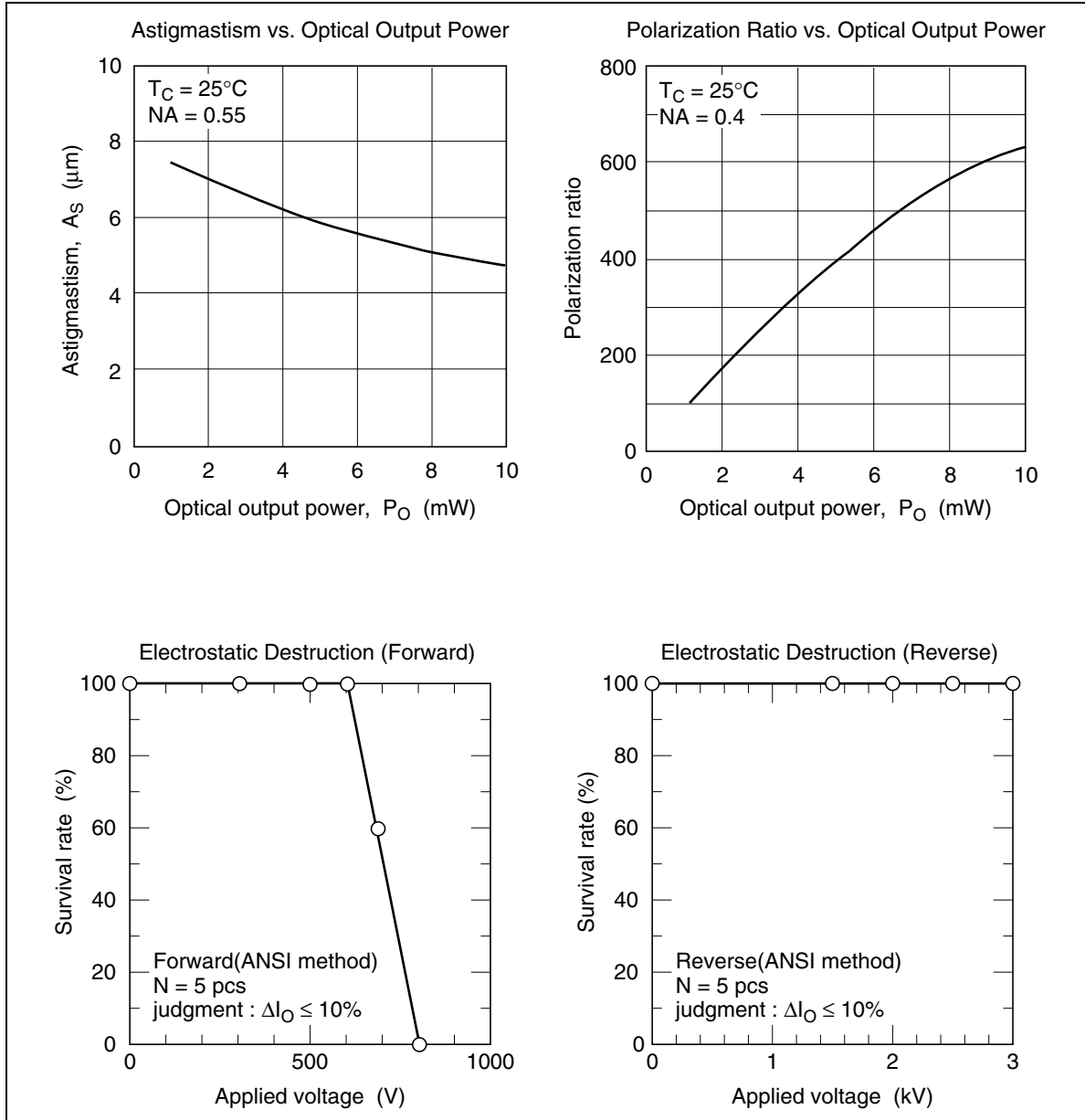
Typical Characteristic Curves



Typical Characteristic Curves (cont)



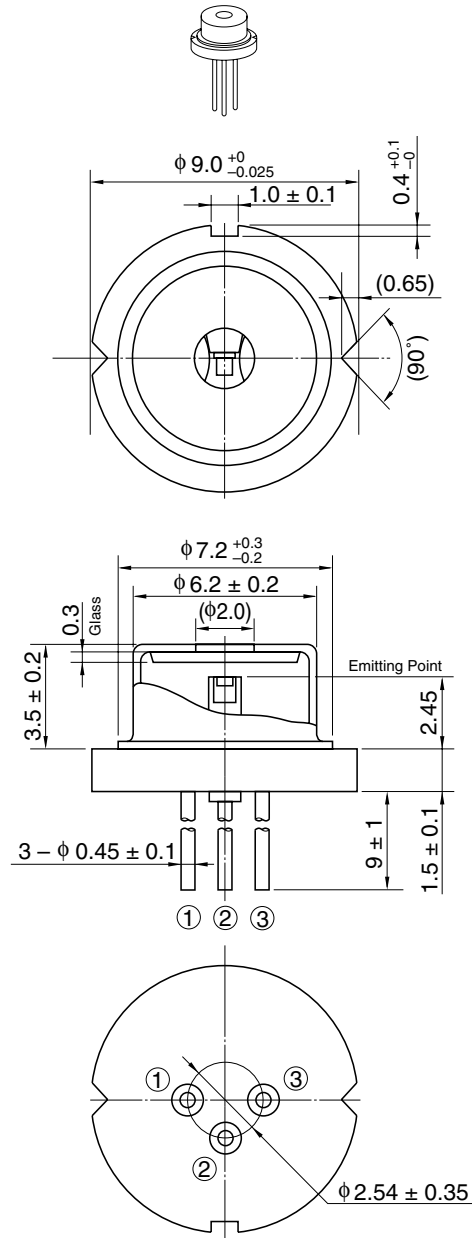
Typical Characteristic Curves (cont)



HL6319G/20G

Package Dimensions

As of July, 2002
Unit: mm



OPJ Code	LD/G2
JEDEC	—
JEITA	—
Mass (reference value)	1.1 g

Cautions

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