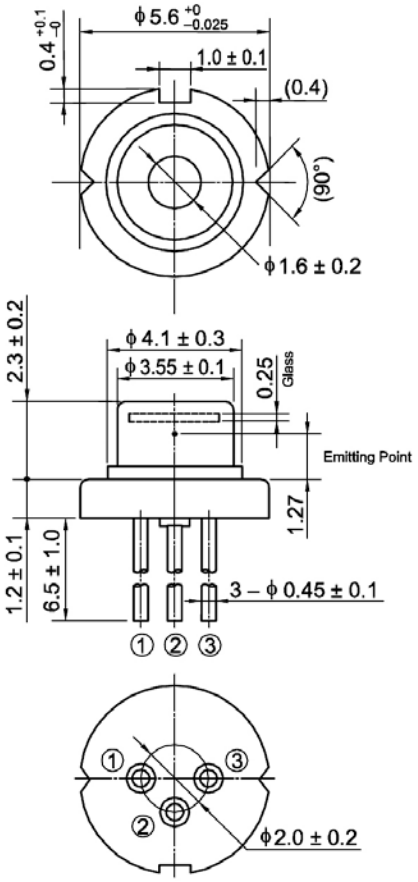
Data Sheet

HL6395MG/96MG

639nm / 12mW AlGaInP Laser Diode

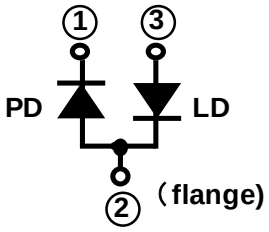
Outline



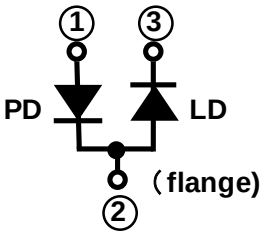
(Unit: mm)

Internal Circuit

▪ HL6395MG



▪ HL6396MG



Features

- Visible light output: 639 nm Typ.
- Optical output power: 10 mW (CW)
- Single transverse mode
- Low operating current: 55 mA Typ.
- Low operating voltage: 2.5 V Max.
- Operating temperature: +60°C
- TE mode oscillation

Application

- Laser leveler
- Laser scanner
- Light source of optical equipments

Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Optical output power	Po	12	mW
LD Reverse Voltage	$V_{R(LD)}$	2	V
PD Reverse Voltage	$V_{R(PD)}$	30	V
Operating Temperature	Topr	-10 ~ +60	°C
Storage Temperature	Tstg	-40 ~ +85	°C

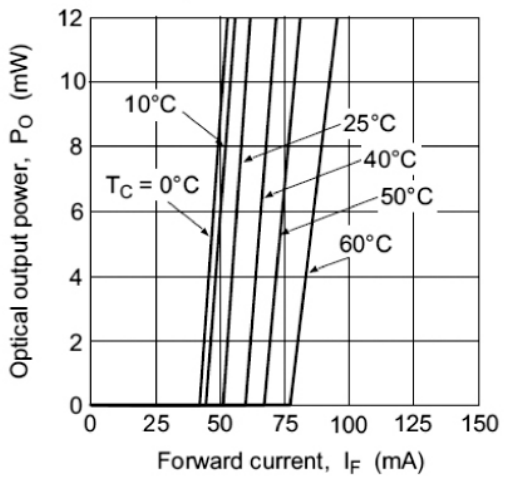
Note: Operating temperature is defined by Case temperature “Tc”. High increase in temperature of LD chip itself is expected during operation due to high current density. Thus, without proper heat dissipation, it is observed that no specific output power is achieved or it results to LD degradation. It is advised that sufficient measure of heat dissipation should be taken so that LD’s maximum operating temperature is not exceeded during actual operation.

Optical and Electrical Characteristics (Tc=25°C)

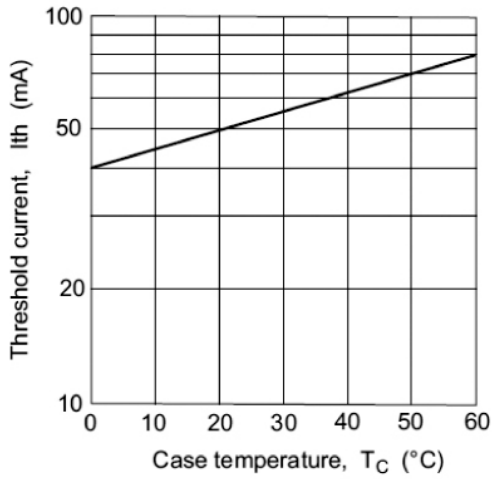
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Threshold current	Ith	-	45	60	mA	-
Operating current	Iop	-	55	70	mA	Po=10mW
Operating voltage	Vop	-	2.3	2.5	V	Po=10mW
Beam divergence Parallel to the junction	θ//	6	9	12	o	Po=10mW, FWHM
Beam divergence Perpendicular to the junction	θ⊥	16	21	24	o	Po=10mW, FWHM
Lasing Wavelength	λp	-	639	643	nm	Po=10mW
Monitor Current	Is	0.04	0.07	0.15	mA	Po=10mW, $V_{R(PD)}$=5V

Typical Characteristic Curves

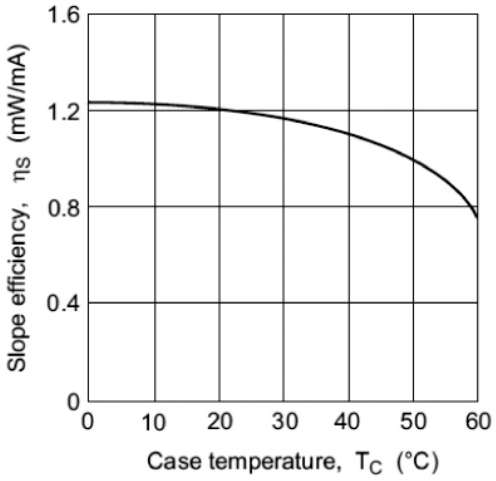
Optical Output Power vs. Forward Current



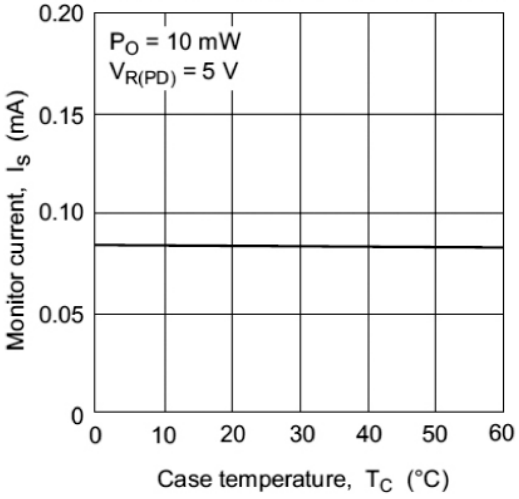
Threshold Current vs. Case Temperature



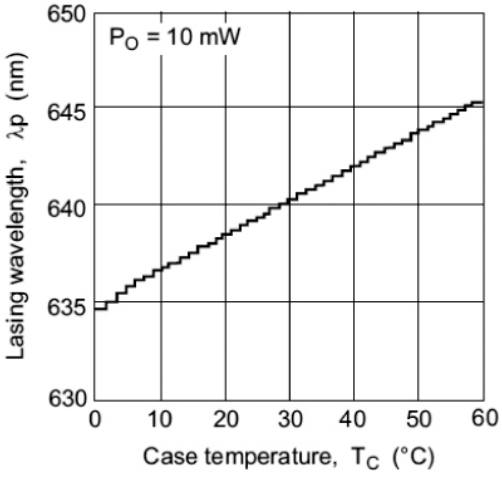
Slope Efficiency vs. Case Temperature



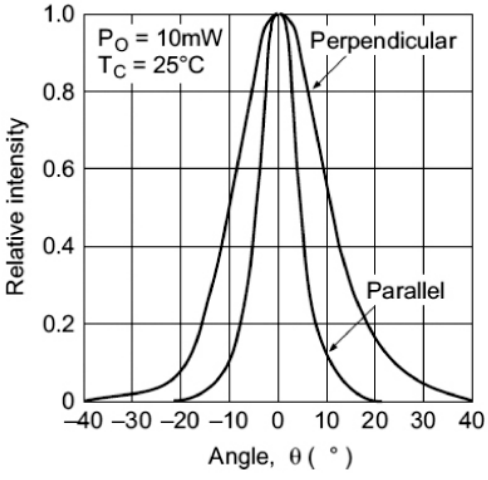
Monitor Current vs. Case Temperature



Lasing Wavelength vs. Case Temperature



Far Field Pattern



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