

# HL6378DG

## Low Operating Current Visible High Power Laser Diode

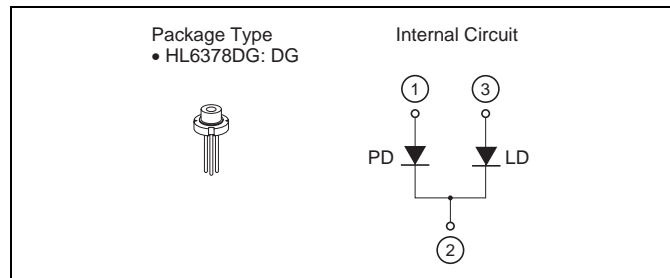
ODE2030-00 (M)  
Rev.0  
Aug. 01, 2008

### Description

This HL6378DG is 0.63  $\mu\text{m}$  band AlGaInP laser diodes with a multi-quantum well (MQW) structure. They are suitable as light sources for laser display, laser module and optical equipment for measurement.

### Features

- Visible light output: 642 nm Typ
- Single longitudinal mode
- Optical output power: 80 mW CW
- Low operating current: 155 mA Typ
- Low operating voltage: 2.7 V Max
- Operating temperature: +50°C
- TE mode oscillation



### Absolute Maximum Ratings

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

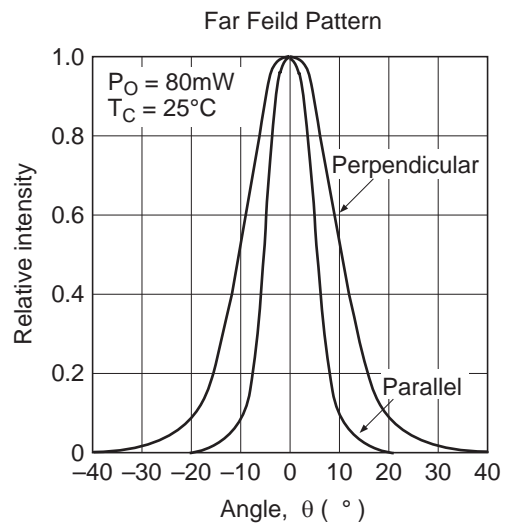
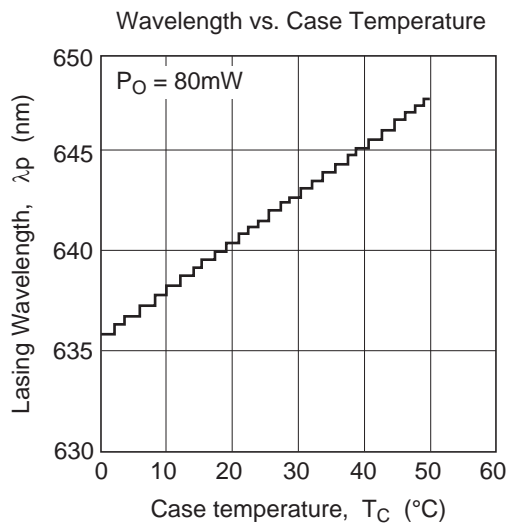
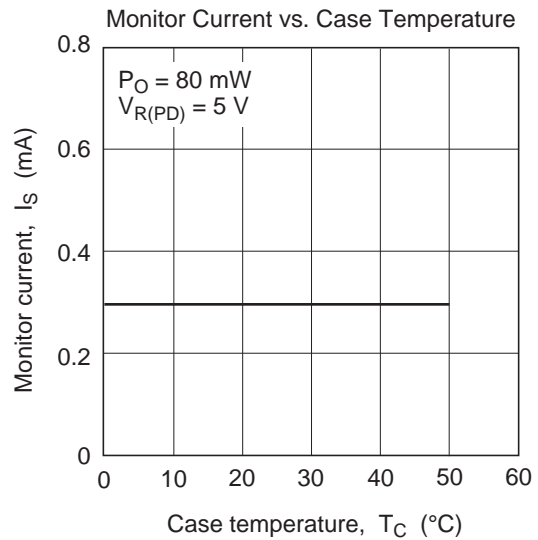
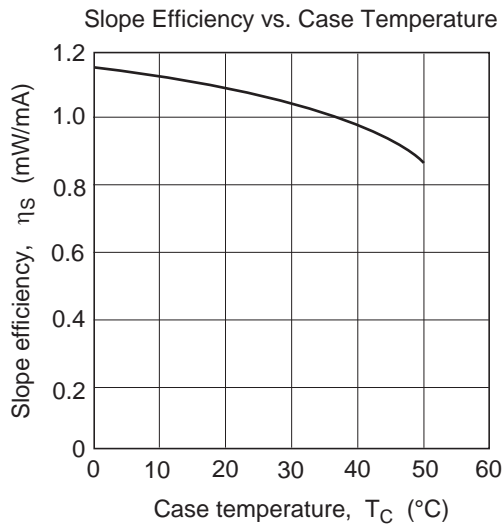
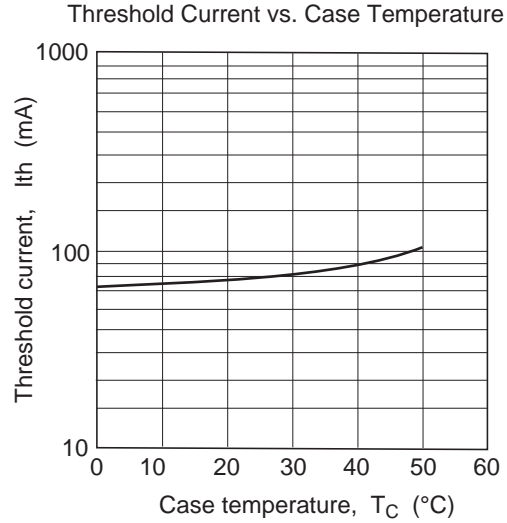
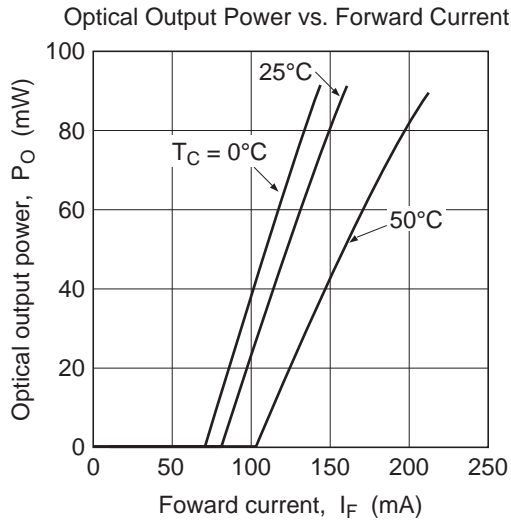
Item	Symbol	Ratings	Unit
Optical output power	$P_O$	90	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	$T_{opr}$	-10 to +50	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +85	$^\circ\text{C}$

### Optical and Electrical Characteristics

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

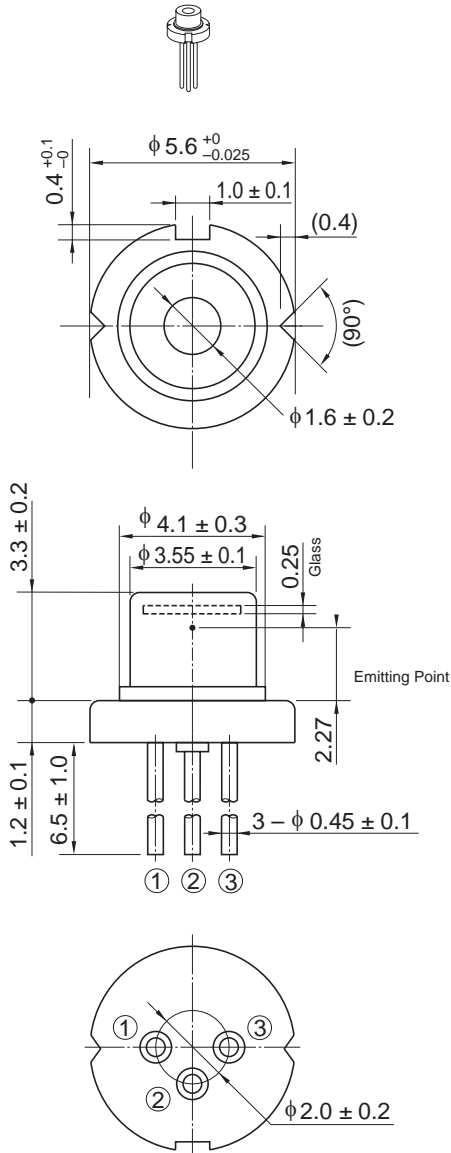
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Threshold current	$I_{th}$	—	80	95	mA	—
Operating current	$I_{OP}$	—	155	175	mA	$P_O = 80 \text{ mW}$
Operating voltage	$V_{OP}$	—	2.5	2.7	V	$P_O = 80 \text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	7	10	13	$^\circ$	$P_O = 80 \text{ mW}$
Beam divergence perpendicular to the junction	$\theta_{\perp}$	16	21	24	$^\circ$	$P_O = 80 \text{ mW}$
Lasing wavelength	$\lambda_p$	635	642	645	nm	$P_O = 80 \text{ mW}$
Monitor current	$I_s$	0.1	0.3	0.5	mA	$P_O = 80 \text{ mW}, V_{R(PD)} = 5 \text{ V}$

Typical Characteristic Curves



Package Dimensions

As of May, 2006  
Unit: mm



OPJ Code	LD/DG
JEDEC	—
JEITA	—
Mass (reference value)	0.35g

## Cautions

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1. The laser light is harmful to human body especially to eye no matter what directly or indirectly. The laser beam shall be observed or adjusted through infrared camera or equivalent.
2. This product contains gallium arsenide (GaAs), which may seriously endanger your health even at very low doses. Please avoid treatment which may create GaAs powder or gas, such as disassembly or performing chemical experiments, when you handle the product.  
When disposing of the product, please follow the laws of your country and separate it from other waste such as industrial waste and household garbage.
3. Definition of items shown in this CAS is in accordance with that shown in Opto Device Databook issued by OPJ unless otherwise specified.

## Sales Offices



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