HL6347MG/48MG

Circular Beam Low Operating Current

ODE-208-1529B (Z)

Rev.2
Sep 2003

Description

The HL6347MG/48MG are 0.63 μm band AlGaInP laser diodes can be operated with low operating current. These products were designed by self aligned refractive index (SRI) active layer structure. These are suitable as a light source for laser levelers, laser scanners and optical equipment for measurement.

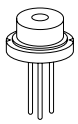
Application

- Laser leveler
- Laser scanner
- Measurement

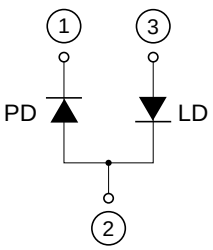
Features

- Optical output power : 10 mW CW
- Single longitudinal mode
- Visible light power : 635 nm Typ
- Low operating current : 35 mA Typ
- Low aspect ratio : 1.2 Typ
- Operating temperature : +50°C
- TM mode oscillation

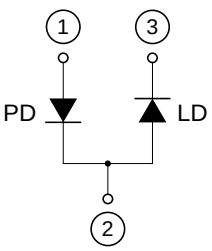
Package Type
• HL6347MG/48MG: MG



Internal Circuit
• HL6347MG



Internal Circuit
• HL6348MG



Absolute Maximum Ratings

(T_C = 25°C)

Item	Symbol	Value	Unit
Optical output power	P_O	10	mW
Pulse optical output power	$P_{O(Pulse)}$	12 *	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: Pulse condition : Pulse width ≤ 1 μs, duty = 50%

Optical and Electrical Characteristics

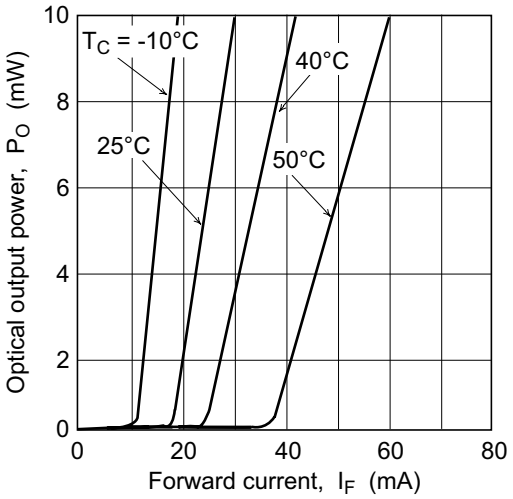
(T_C = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Optical output power	P_O	10	—	—	mW	—
Threshold current	Ith	—	20	35	mA	—
Slope efficiency	ηs	0.5	0.8	1.2	mW/mA	6 (mW) / ($I_{(8mW)}$ – $I_{(2mW)}$)
Operating current	I_{OP}	—	35	45	mA	P_O = 10 mW
Operating voltage	V_{OP}	—	2.4	2.7	V	P_O = 10 mW
Lasing wavelength	λp	630	635	640	nm	P_O = 10 mW
Beam divergence parallel to the junction	θ//	—	17	25	deg.	P_O = 10 mW
Beam divergence perpendicular to the junction	θ⊥	—	20	25	deg.	P_O = 10 mW
Aspect ratio	θ⊥/θ//	—	1.2	1.5	—	P_O = 10 mW
Monitor current	I_S	0.06	0.14	0.24	mA	P_O = 10 mW, $V_{R(PD)}$ = 5 V

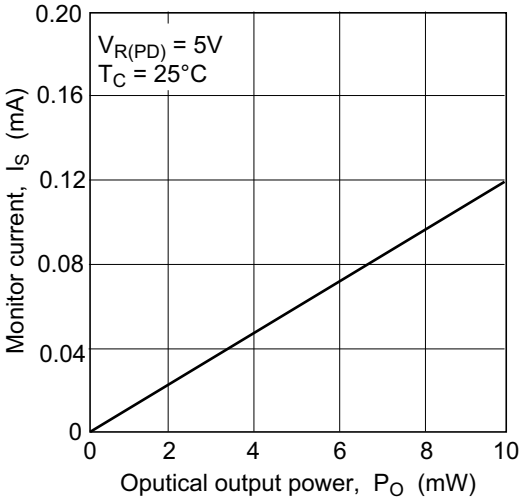
Notes:
1. Care must be taken in laser diodes handling to prevent optical damage caused by forward surges as well as by ESD.
2. The wavefront performance is not guaranteed.
3. The beam has 12 deg offset against the package reference plane. Please take account it mounted on a board.
4. The beam divergence has dependence of temperature, if you use this device into your system please check on it enough before design.

Typical Characteristic Curves

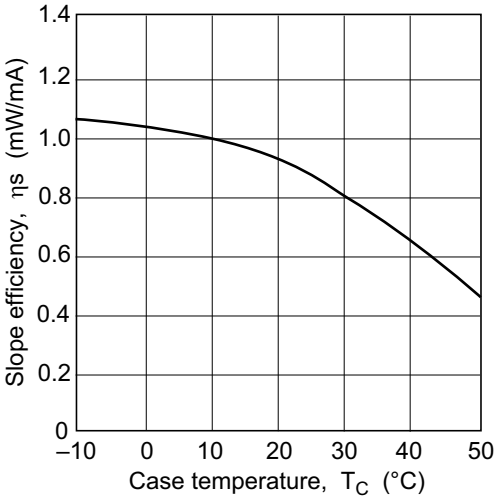
Optical Output Power vs. Forward Current



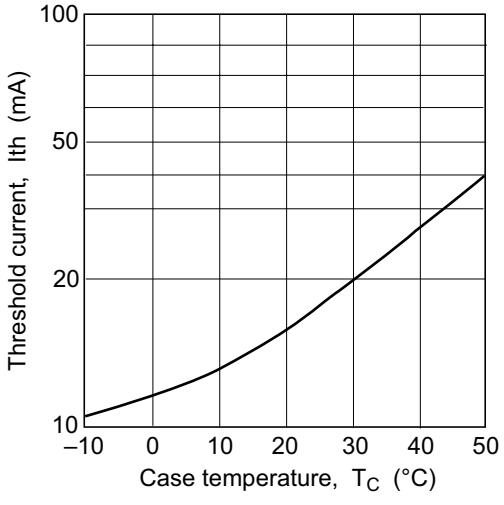
Monitor Current vs. Optical Output Power



Slope Efficiency vs. Case Temperature



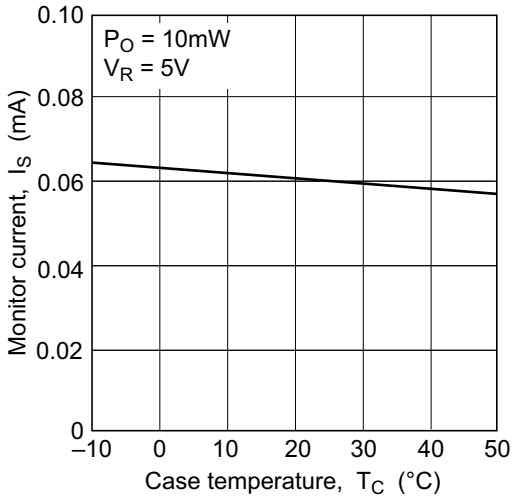
Threshold Current vs. Case Temperature



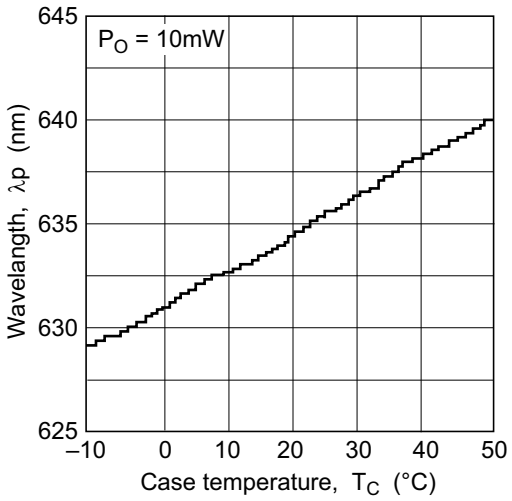
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Typical Characteristic Curves (cont)

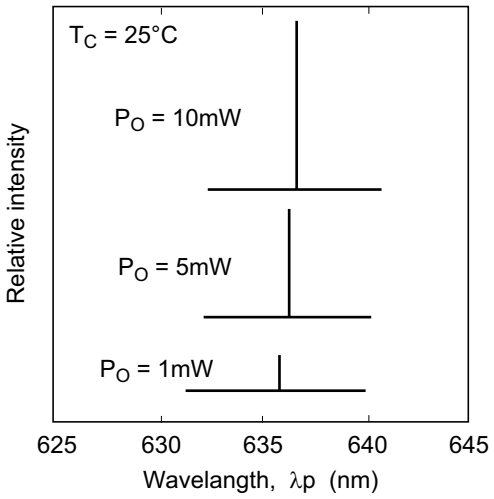
Monitor Current vs. Case Temperature



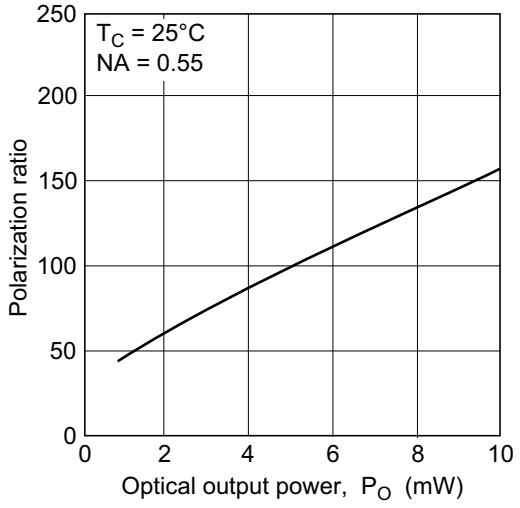
Wavelength vs. Case Temperature



Lasing Spectrum

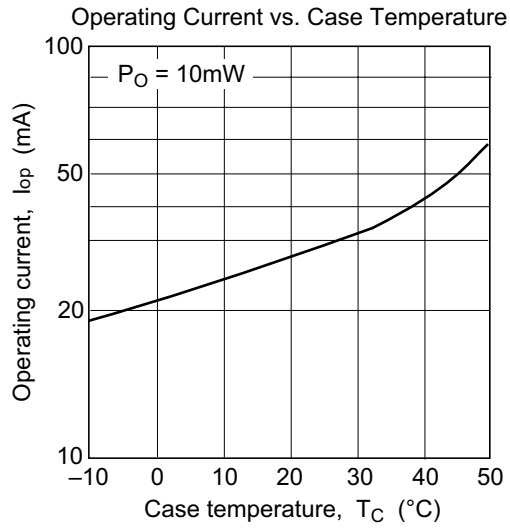


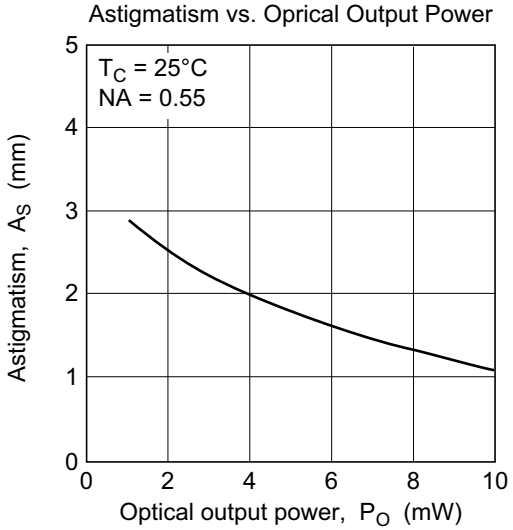
Polarization Ratio vs. Optical Output Power

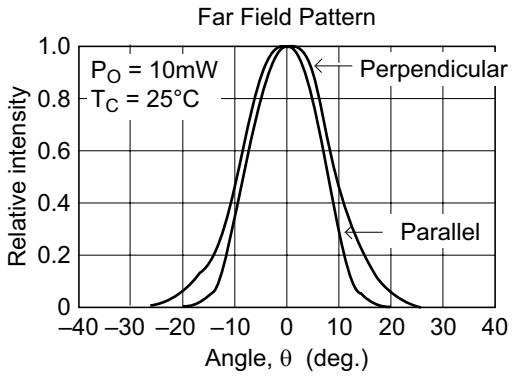


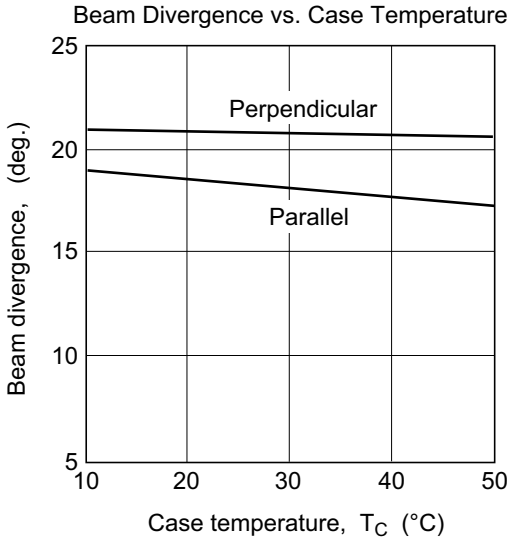
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Typical Characteristic Curves (cont)

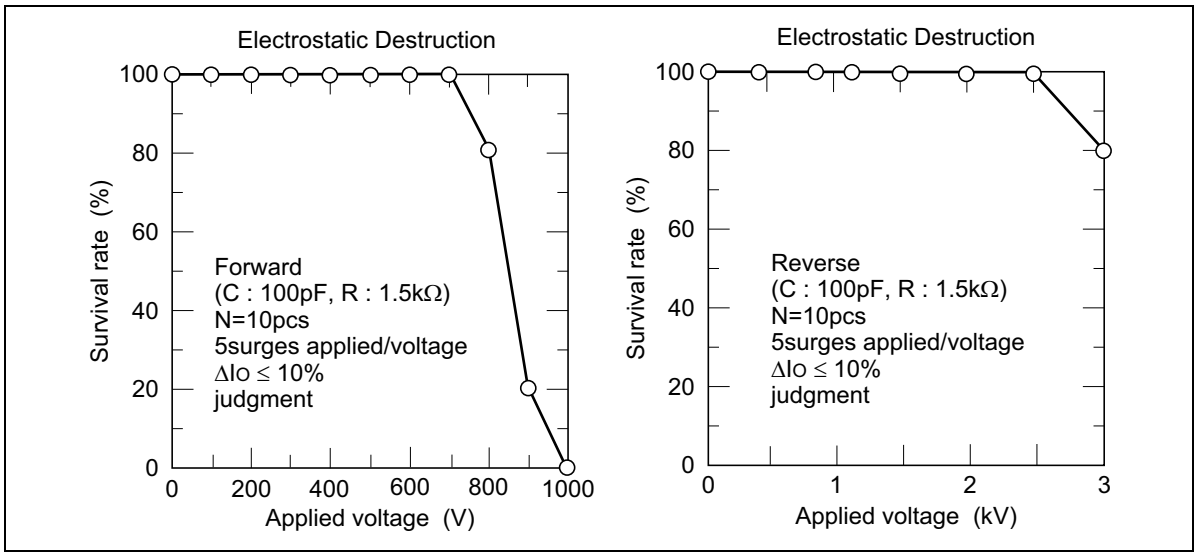






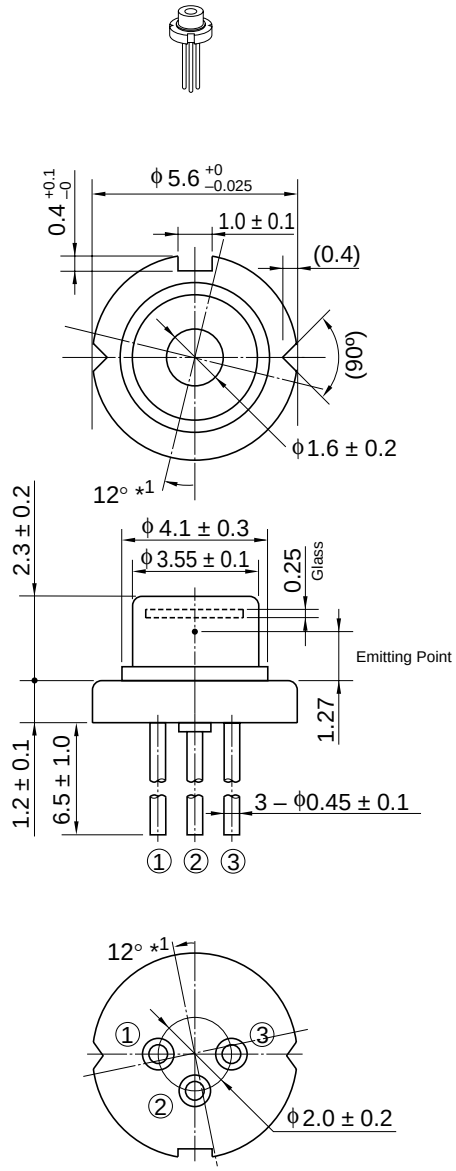


Typical Characteristic Curves (cont)



Package Dimensions

Unit: mm



Note: 1. The beam has 12 deg offset against the package reference plane.
Please take account it mounted on a board.

OPJ Code	LD/MG
JEDEC	—
JEITA	—
Mass (reference value)	0.3 g

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Opto Device Business Unit Opnext Japan, Inc.
190 Kashiwagi, Komoro-shi, Nagano 384-8511, Japan
Tel: (0267) 22-4111

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