HL6347MG/48MG

Circular Beam Low Operating Current

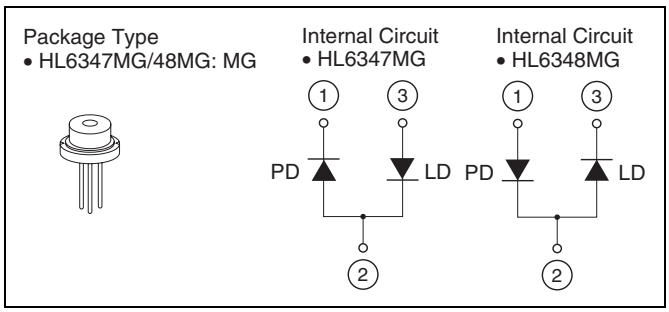
ODE-208-019A (Z)
Rev.1
Dec. 13, 2007

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.

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



Absolute Maximum Ratings

(T_C = 25°C)

Item	Symbol	Ratings	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

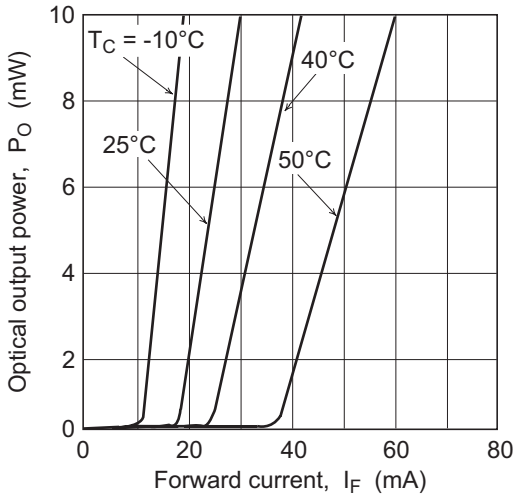
(T_C = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
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//	13	17	25	°	P_O = 10 mW
Beam divergence perpendicular to the junction	θ⊥	13	20	25	°	P_O = 10 mW
Aspect ratio	θ⊥/θ//	—	1.2	1.5	-	P_O = 5 mW, NA = 0.55
Monitor current	I_S	0.03	0.06	0.12	mA	P_O = 10 mW, $V_{R(PD)}$ = 5 V

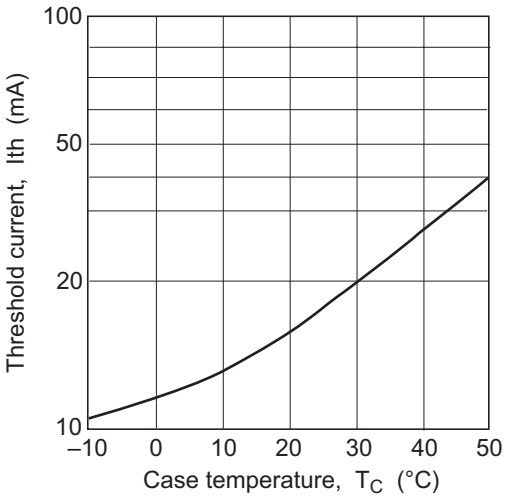
Notes: 1. The beam has 12 deg offset against the package reference plane. Please take account it mounted on aboard.
2. The beam divergence has dependence of temperature, if you use this device into your system please check on it enough before design.

Typical Characteristic Curves

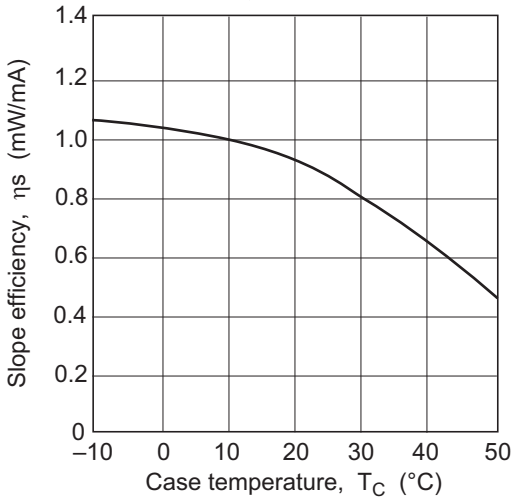
Optical Output Power vs. Forward Current



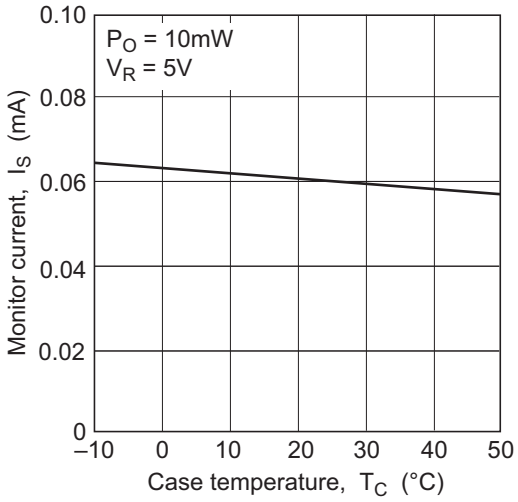
Threshold Current vs. Case Temperature



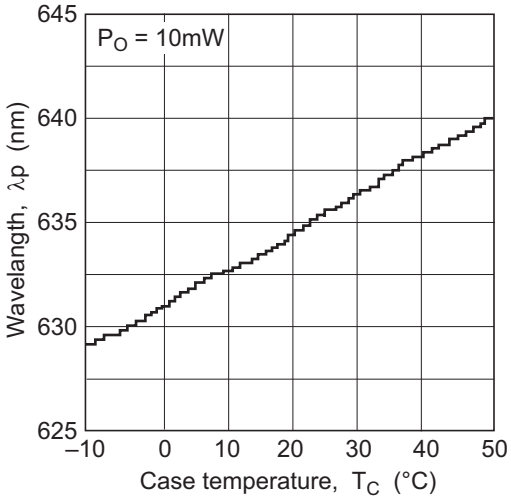
Slope Efficiency vs. Case Temperature



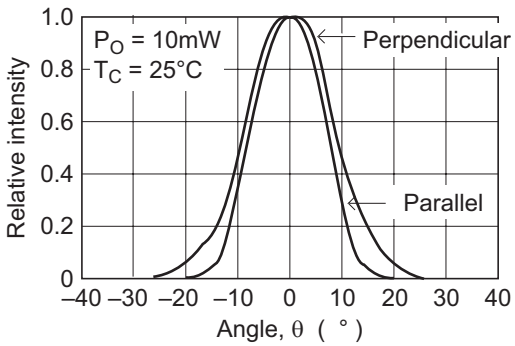
Monitor Current vs. Case Temperature



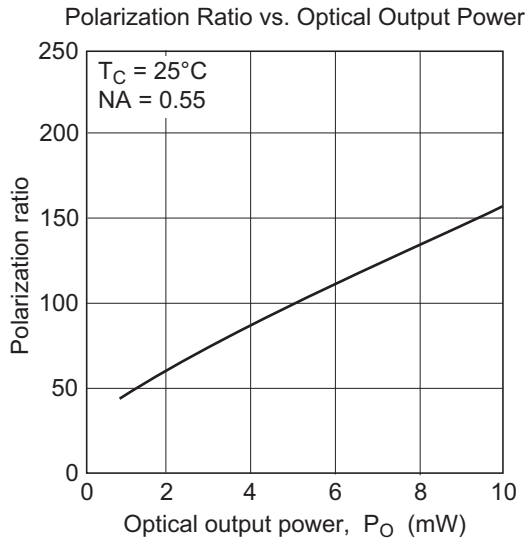
Wavelength vs. Case Temperature

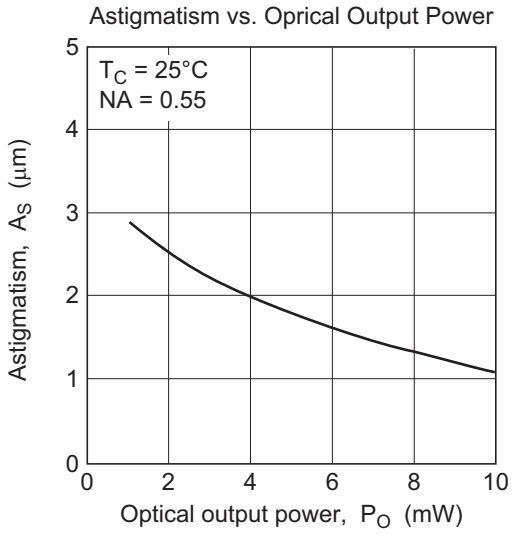


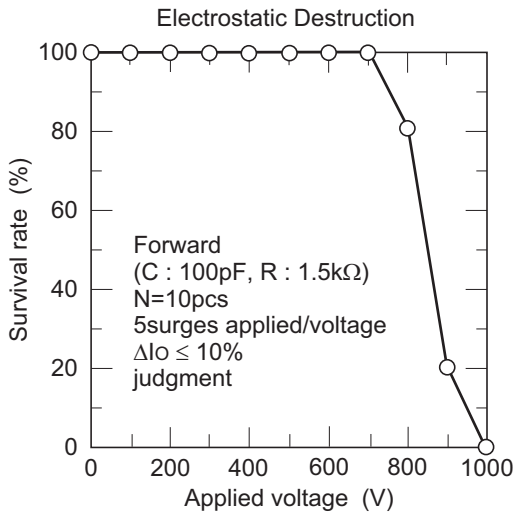
Far Field Pattern

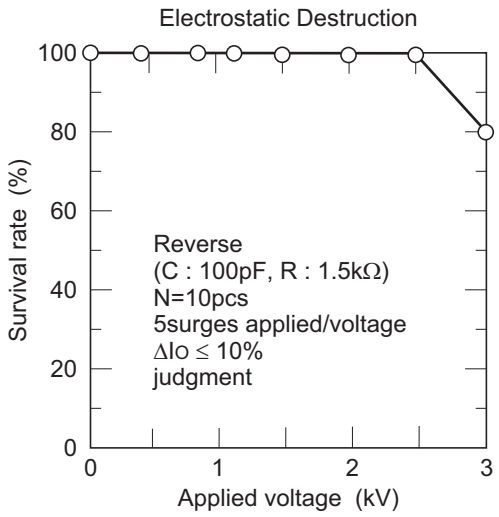


Typical Characteristic Curves (cont.)



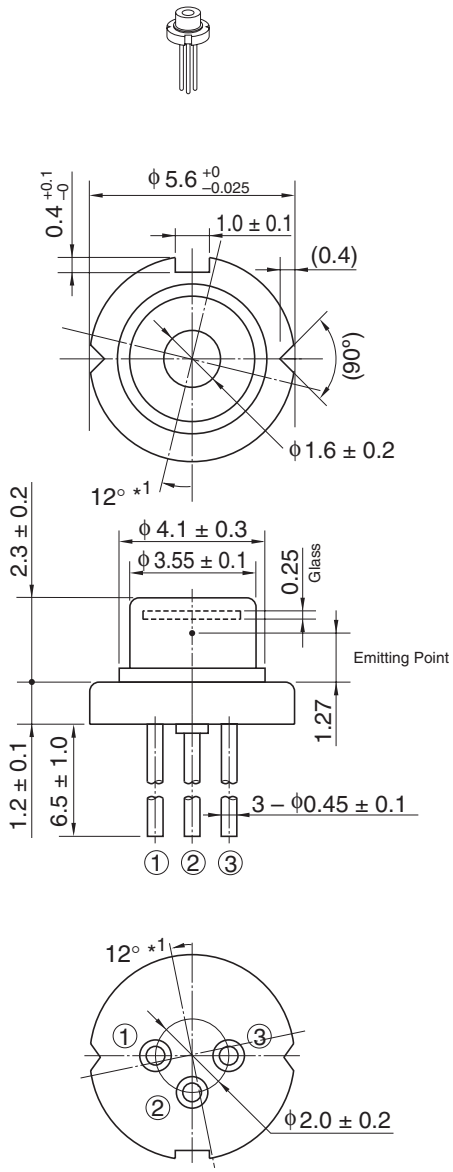






Package Dimensions

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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Device Business Unit Opnext Japan, Inc.
Takagi Bldg., 3F, 1-3-9, Iwamoto-cho, Chiyoda-ku, Tokyo 101-0032 Japan
Tel: (03) 3865-5591

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