

HL6347MG/48MG

Circular Beam Low Operating Current

ODE2021-00 (M)

Rev.0

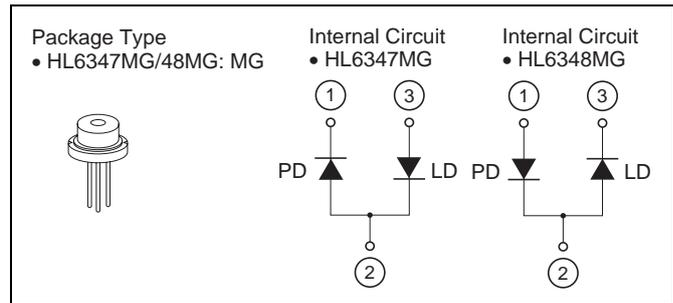
Aug. 01, 2008

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

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

Item	Symbol	Ratings	Unit
Optical output power	P_O	10	mW
Pulse optical output power	$P_{O(\text{pulse})}$	12 *	mW
LD reverse voltage	$V_{R(\text{LD})}$	2	V
PD reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	T_{opr}	-10 to +50	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

Note: Pulse condition : Pulse width $\leq 1 \mu\text{s}$, duty = 50%

Optical and Electrical Characteristics

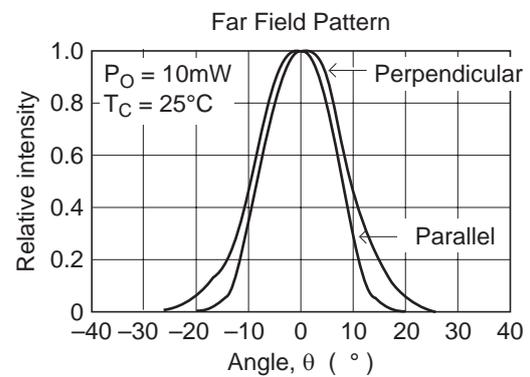
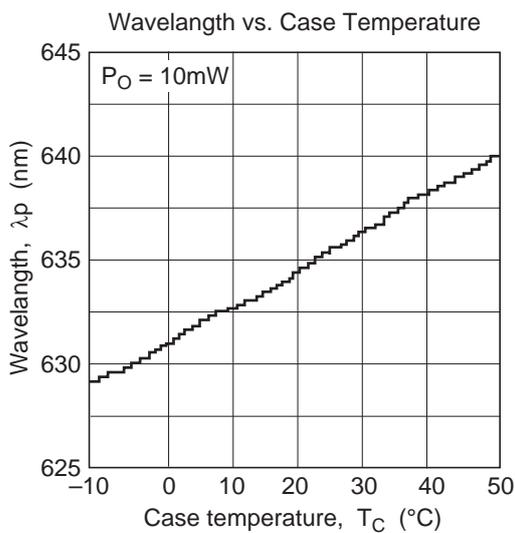
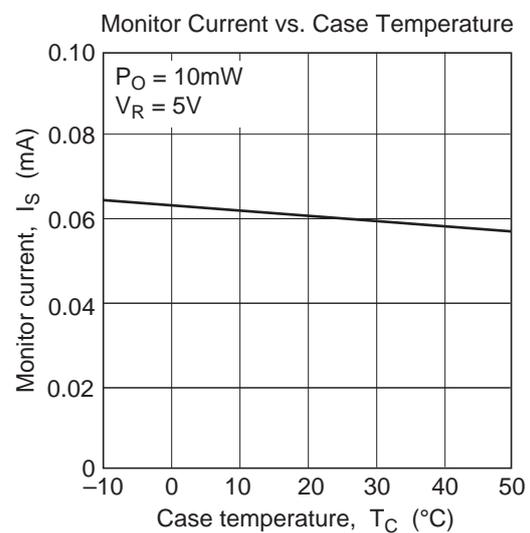
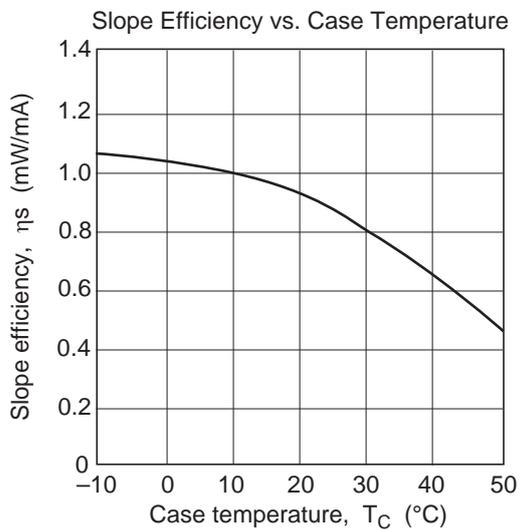
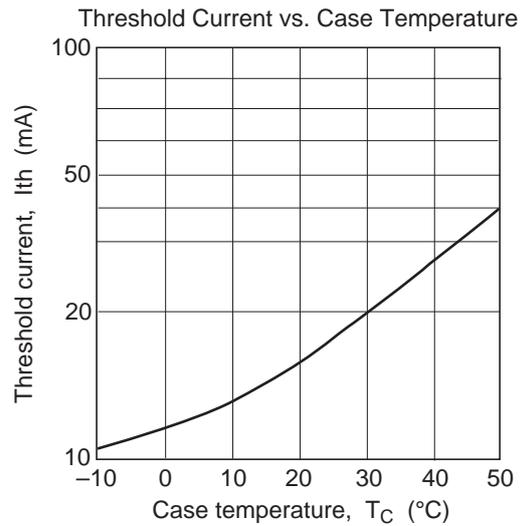
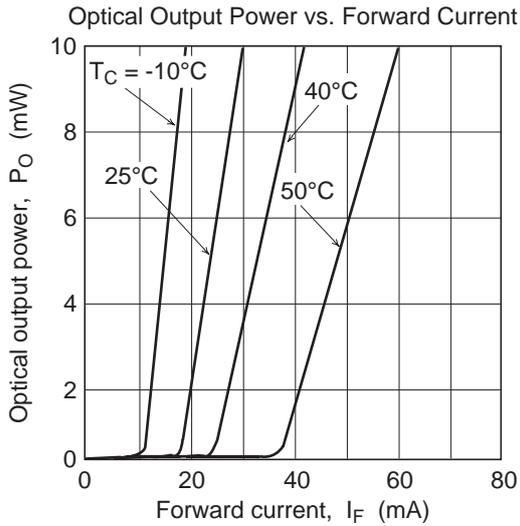
($T_C = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	I_{th}	—	20	35	mA	—
Slope efficiency	η_s	0.5	0.8	1.2	mW/mA	$6 \text{ (mW)} / (I_{(8\text{mW})} - I_{(2\text{mW})})$
Operating current	I_{OP}	—	35	45	mA	$P_O = 10 \text{ mW}$
Operating voltage	V_{OP}	—	2.4	2.7	V	$P_O = 10 \text{ mW}$
Lasing wavelength	λ_p	630	635	640	nm	$P_O = 10 \text{ mW}$
Beam divergence parallel to the junction	$\theta_{//}$	13	17	25	$^\circ$	$P_O = 10 \text{ mW}$
Beam divergence perpendicular to the junction	θ_{\perp}	13	20	25	$^\circ$	$P_O = 10 \text{ mW}$
Aspect ratio	$\theta_{\perp}/\theta_{//}$	—	1.2	1.5	-	$P_O = 5 \text{ mW}$, $NA = 0.55$
Monitor current	I_s	0.03	0.06	0.12	mA	$P_O = 10 \text{ mW}$, $V_{R(\text{PD})} = 5 \text{ V}$

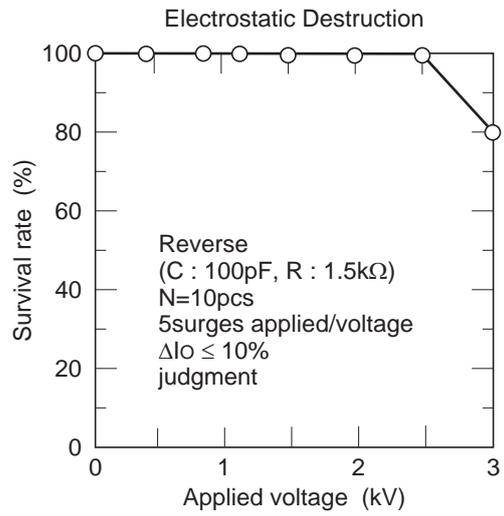
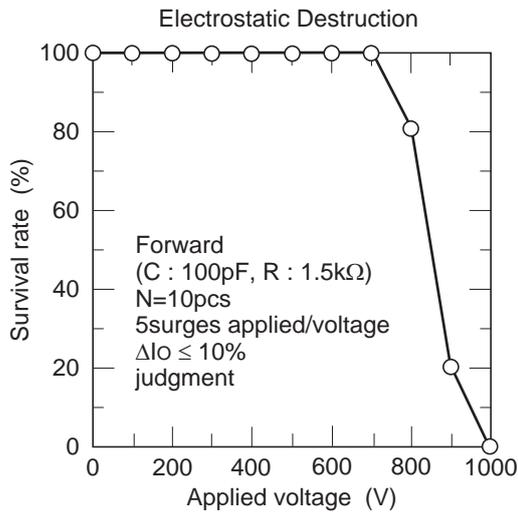
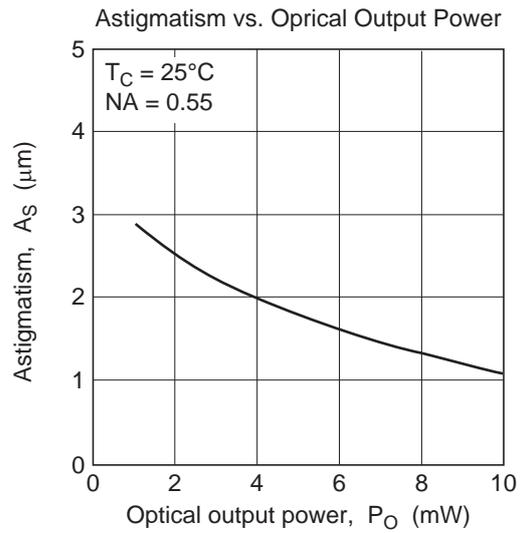
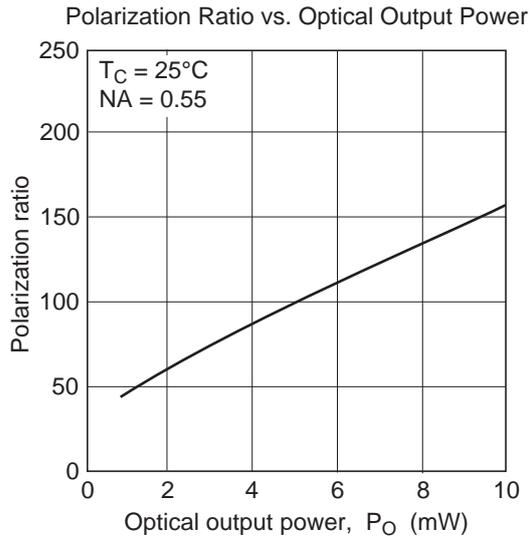
Notes: 1. The beam has 12 deg offset against the package reference plane. Please take account it mounted on board.

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

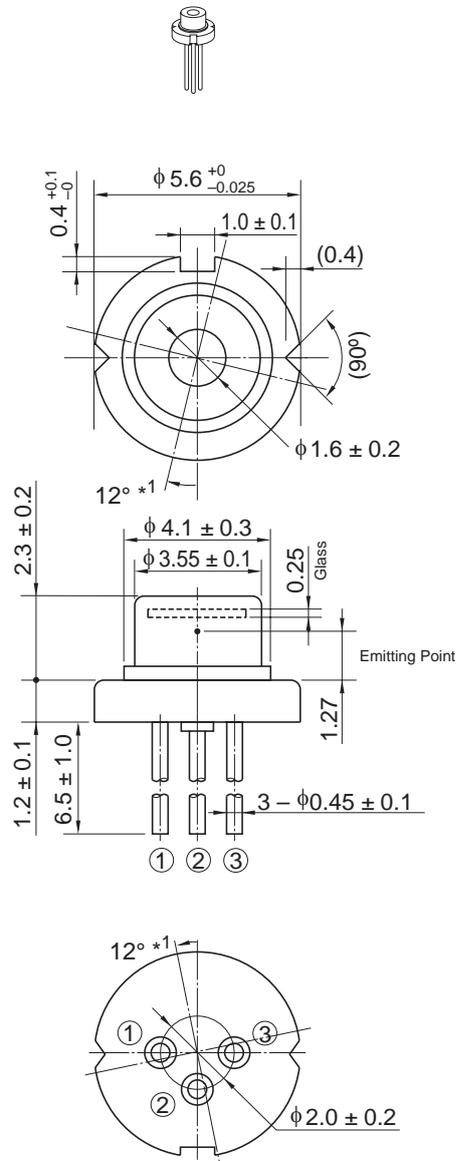


Typical Characteristic Curves (cont.)



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

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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