HL6712G

AlGaInP Laser Diode

HITACHI

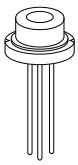
Description

The HL6712G is 0.67 µm band AlGaInP index-guided laser diode with a double heterostructure. It is suitable as light sources for barcode readers, levelers, laser printers, and various other types of optical equipment. Hermetic sealing of the packages assure high reliability.

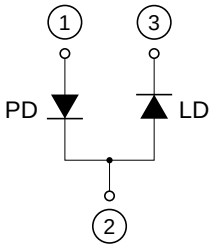
Features

- Visible light output at wavelengths up to 680 nm
- Single longitudinal mode
- Low threshold current: 40 mA Typ
- Low astigmatism: 10 µm Typ
- Operates at temperatures up to 50°C
- Built-in monitor photodiode

Package Type
• HL6712G: G1



Internal Circuit



Absolute Maximum Ratings (T_C = 25°C)

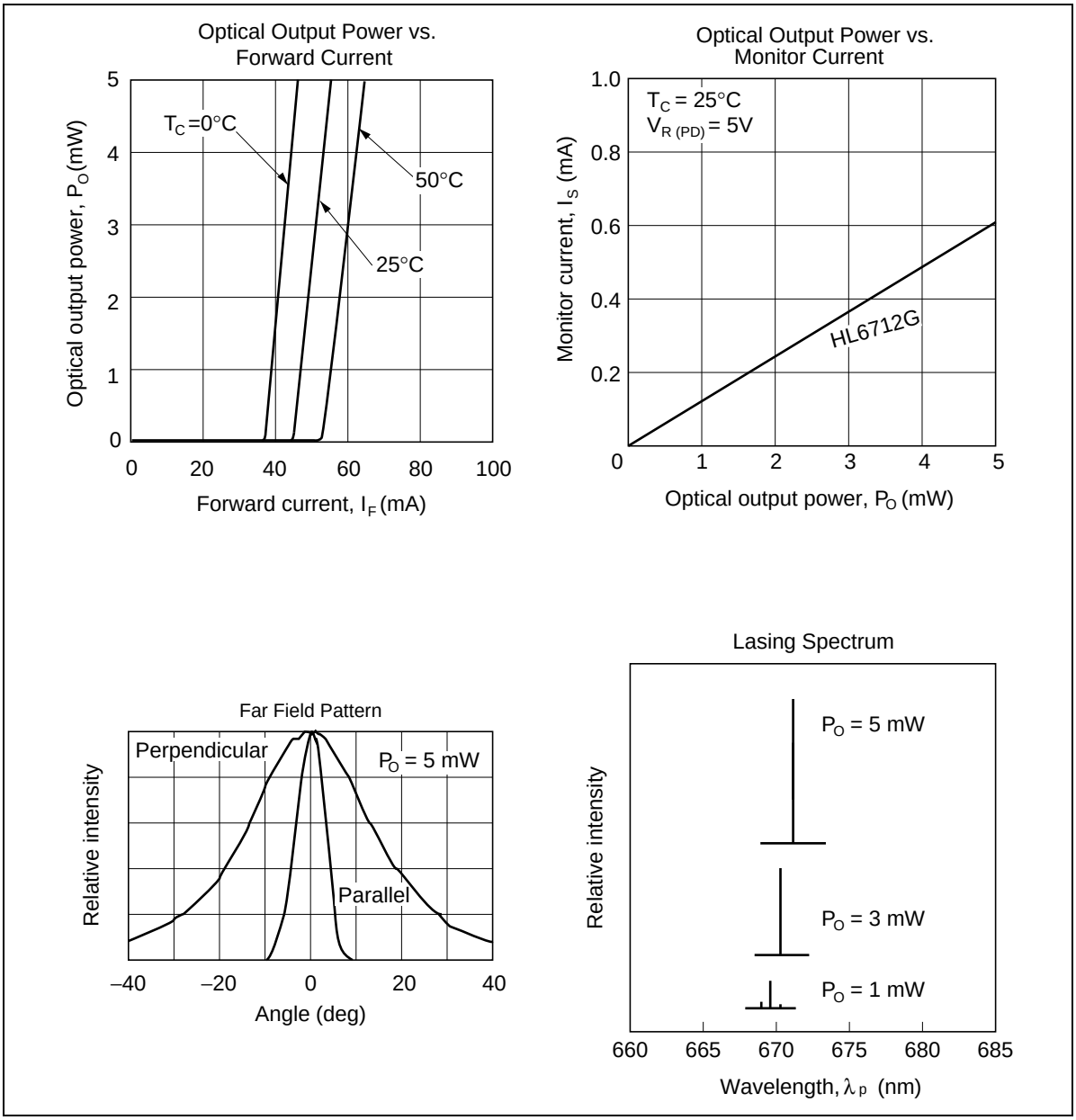
Item	Symbol	Rated Value	Unit
Optical output power	P_O	5	mW
Pulse optical output power	$P_{O\ (pulse)}$	6*[1]	mW
LD reverse voltage	$V_{R\ (LD)}$	2	V
PD reverse voltage	$V_{R\ (PD)}$	30	V
Operating temperature	Topr	–10 to +50	°C
Storage temperature	Tstg	–40 to +85	°C

Note: 1. Maximum 50% duty cycle, maximum 1µs pulse width

Optical and Electrical Characteristics (T_C = 25°C)

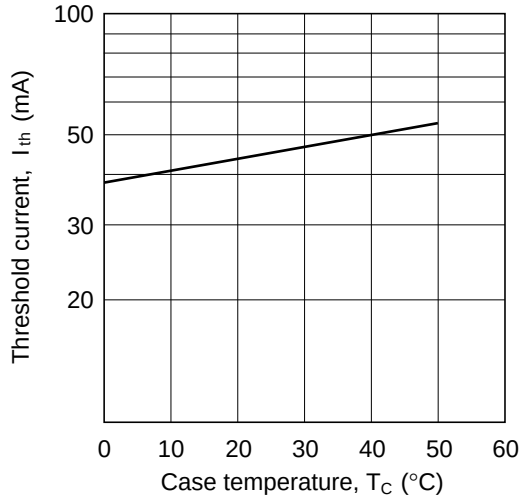
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	5	—	—	mW	Kink free
Threshold current	Ith	—	40	65	mA	
Slope efficiency	η	0.3	0.55	0.7	mW/mA	3 mW/$I_{(4\ mW)}$–$I_{(1\ mW)}$
Lasing wavelength	λp	660	670	680	nm	P_O = 5 mW
Beam divergence (parallel)	θ//	5	8	11	deg.	P_O = 5 mW, FWHM
Beam divergence (perpendicular)	θ⊥	22	27	37	deg.	P_O = 5 mW, FWHM
Monitor current	Is	0.25	0.6	1.25	mA	P_O = 5 mW, $V_{R\ (PD)}$ = 5 V
Astigmatism	A_S	—	10	—	µm	P_O = 5 mW, NA = 0.4

Typical Characteristic Curves

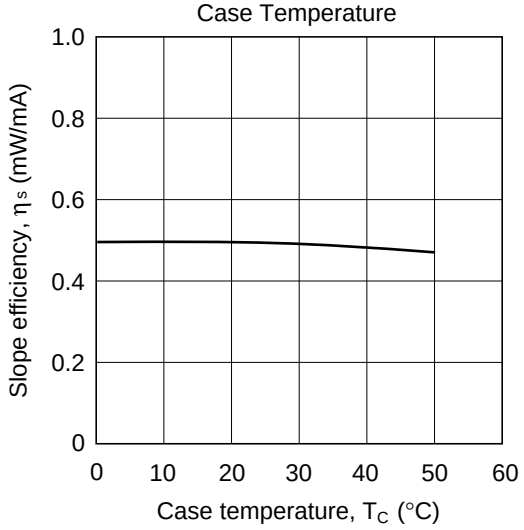


Typical Characteristic Curves (cont)

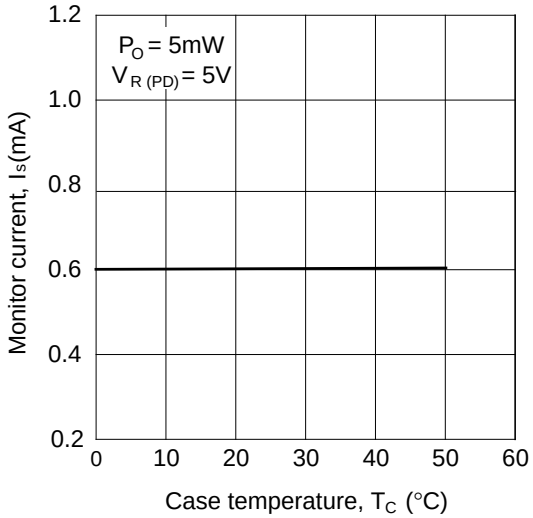
Threshold Current vs. Case Temperature



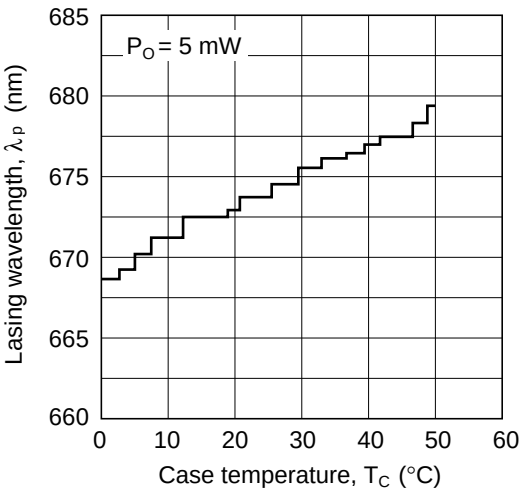
Slope Efficiency vs. Case Temperature



Monitor Current vs. Case Temperature



Wavelength vs. Case Temperature



Typical Characteristic Curves (cont)

