

HL6711G**AlGaInP LD**

T-41-05

Description

The HL6711G is a 0.67 μm band AlGaInP gain-guided laser diode with a double heterostructure. It is suitable as a light source for barcode readers, levelers and various other types of optical equipment. Hermetic sealing of the package assures high reliability.

Features

- Visible light output at wavelengths up to 680 nm
- Multiple longitudinal modes
- Low threshold current; 80 mA Typ.
- Operates at temperatures up to 50°C
- Built-in monitor photodiode

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

Item	Symbol	Rated Value	Units
Optical output power	P_O	5	mW
Pulse optical output power	$P_{O(\text{pulse})}$	6*	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	°C
Storage temperature	T_{stg}	-40 to +85	°C

* Maximum 50% duty cycle, maximum 1 μs pulse width

Optical and Electrical Characteristics ($T_C = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Units	Test Conditions
Threshold current	I_{th}	—	80	95	mA	
Optical output power	P_O	5	—	—	mW	Kink free
LD operating voltage	V_{OP}	—	2.3	2.7	V	$P_O = 5 \text{ mW}$
Slope efficiency	η	0.40	0.70	1.0	mW/mA	$\frac{3 \text{ (mW)}}{I_{(4 \text{ mW})} - I_{(1 \text{ mW})}}$
Lasing wavelength	λ_P	—	675	680	nm	$P_O = 5 \text{ mW}$
Beam divergence (parallel)	θ_{\parallel}	6	8	12	deg.	$P_O = 5 \text{ mW}$, FWHM
Beam divergence (perpendicular)	θ_{\perp}	20	30	40	deg.	$P_O = 5 \text{ mW}$, FWHM
Monitor current	I_S	0.03	0.07	0.2	mA	$P_O = 5 \text{ mW}$, $V_R(\text{PD}) = 5 \text{ V}$

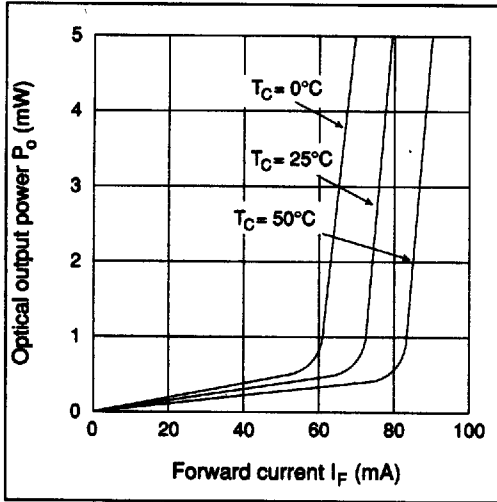
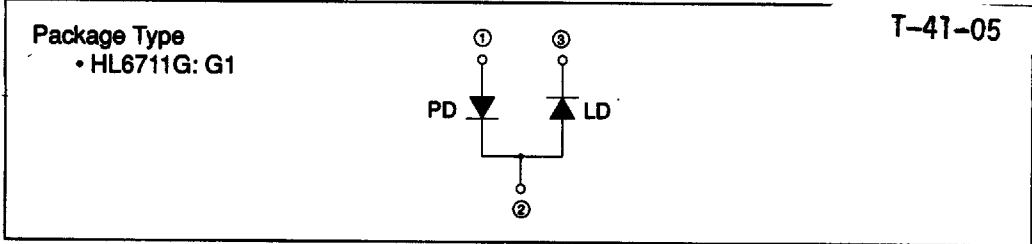


Figure 1 Optical Output Power vs. Forward Current

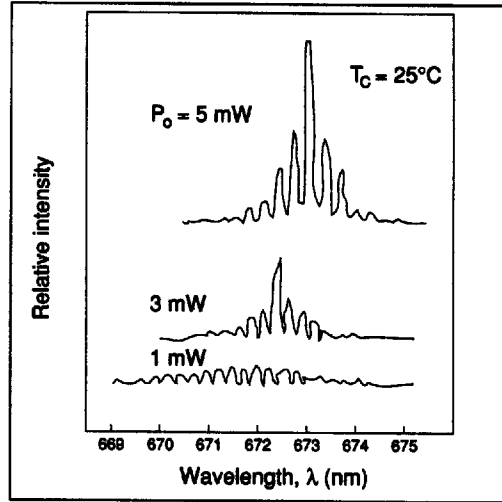


Figure 2 Lasing Spectrum

HL6711G

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4496205 0012000 039 HIT4

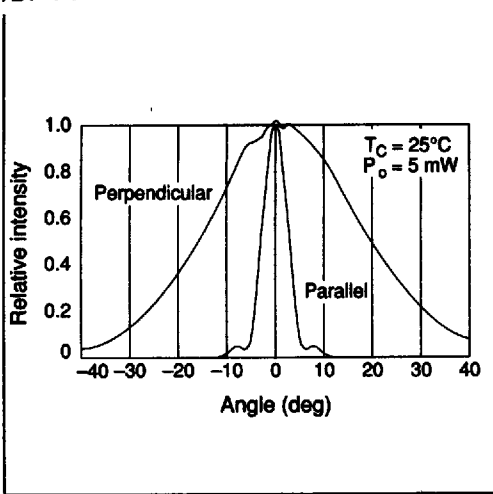


Figure 3 Far Field Pattern

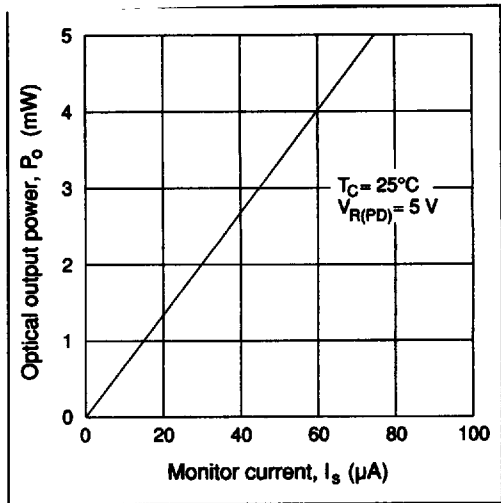


Figure 4 Optical Output Power vs. Monitor Current

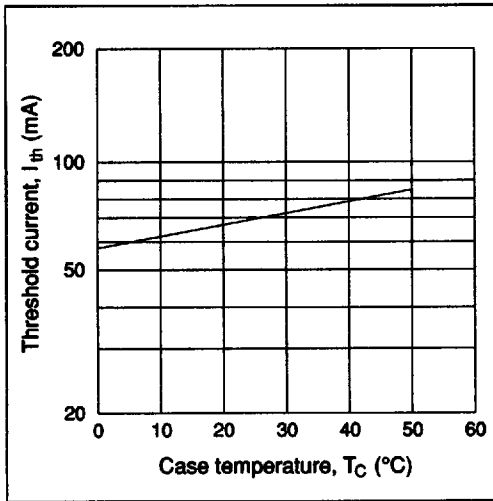


Figure 5 Temperature Dependence of Threshold Current

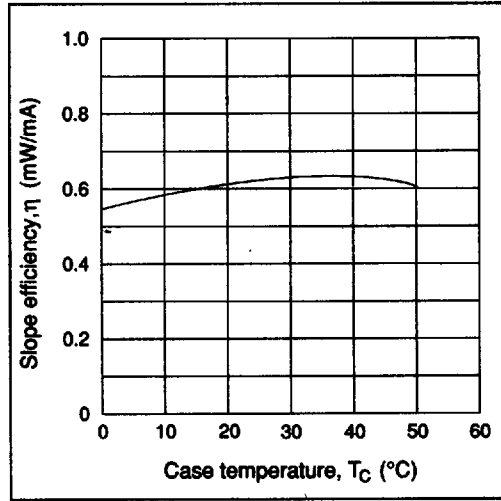


Figure 6 Temperature Dependence of Slope Efficiency

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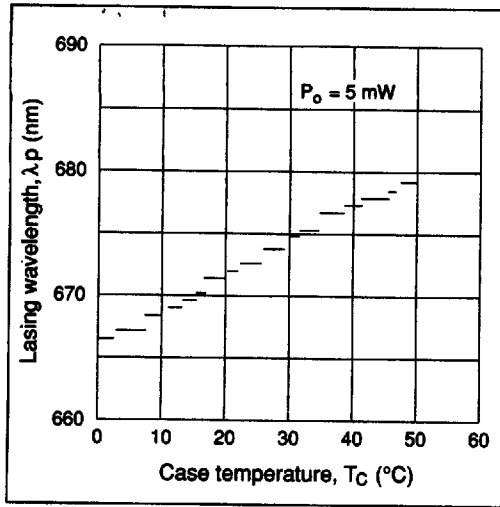


Figure 7 Temperature Dependence of Lasing Wavelength

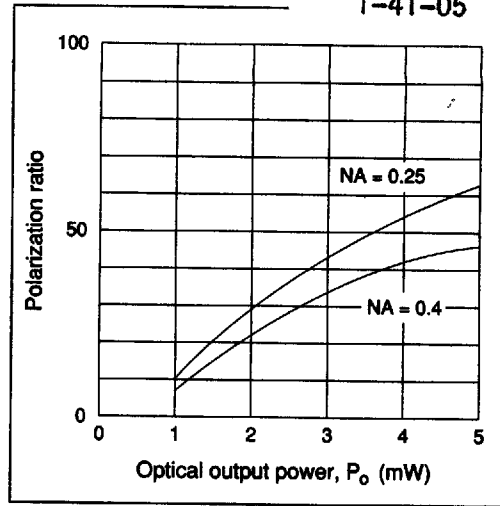


Figure 8 Optical Output Power Dependence of Polarization Ratio