
HL7851G

GaAlAs Laser Diode

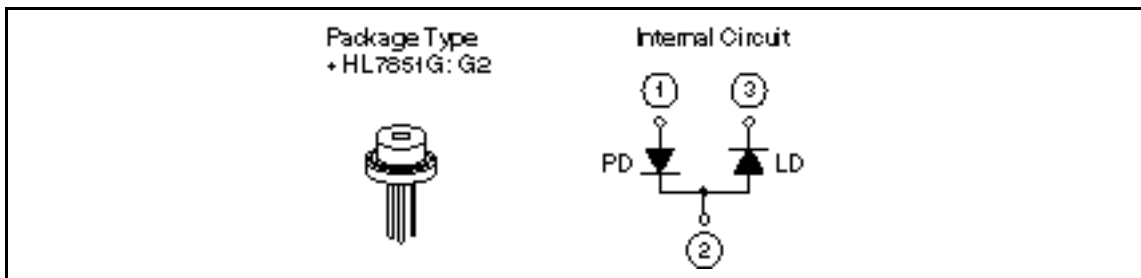
HITACHI

Description

The HL7851G is a high power 0.78 μm band GaAlAs laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source for optical disk memories, levelers and various other types of optical equipment. Hermetic sealing of the package assures high reliability.

Features

- Visible light output: $\lambda = 785 \text{ nm Typ}$
- Small beam ellipticity: 9.5:23
- High output power: 50 mW (CW)
- Built-in monitor photodiode



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

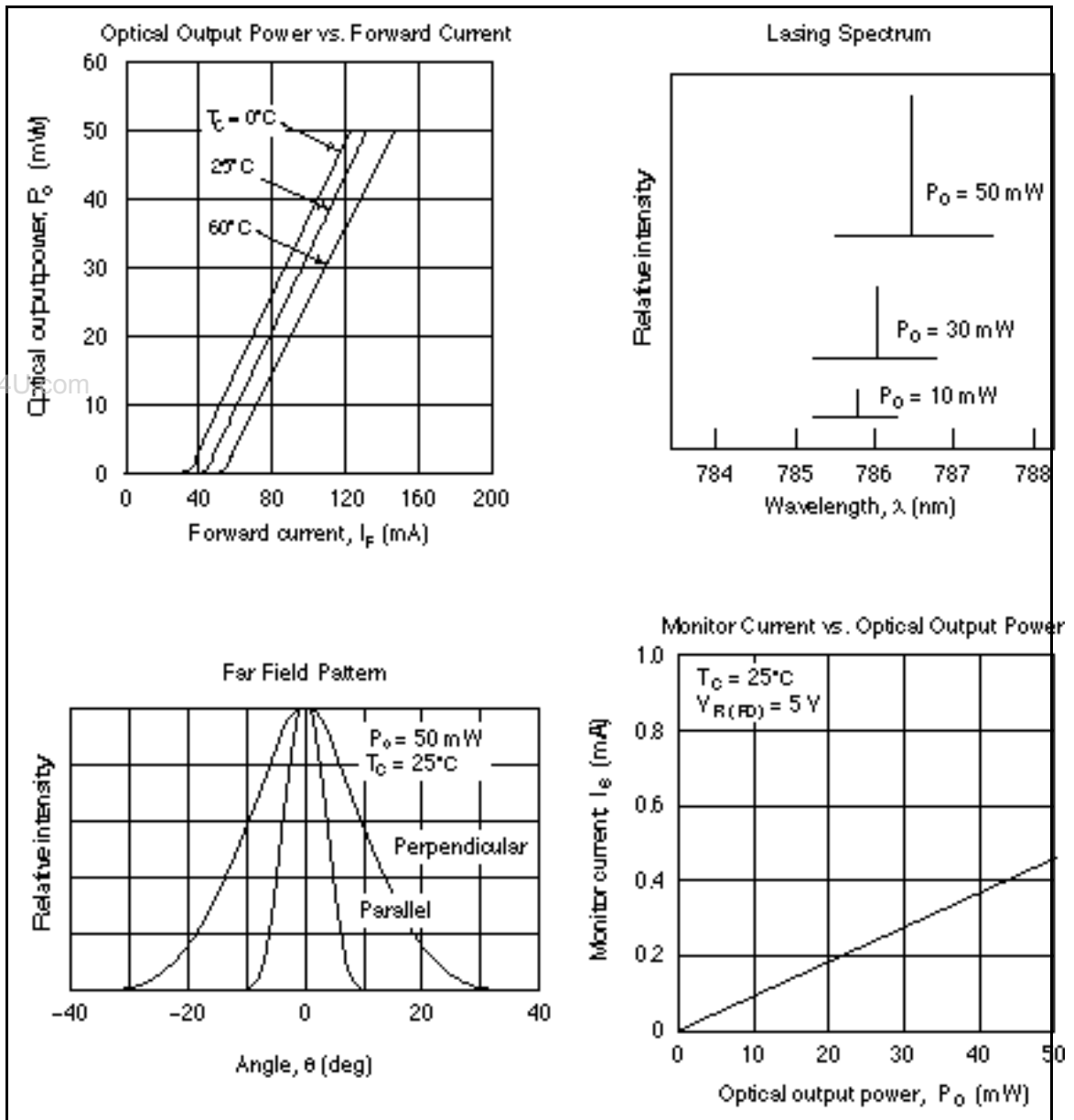
Item	Symbol	Rated Value	Unit
Optical output power	P_O	50	mW
Pulse optical output power	$P_{O(\text{pulse})}$	60* ¹	mW
LD reverse voltage	$V_{R(\text{LD})}$	2	V
PD reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	T_{opr}	-10 to +60	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

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

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

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_O	50	—	—	mW	Kink free
Threshold current	I_{th}	—	45	70	mA	
Slope efficiency		0.35	0.55	0.7	mW/mA	$40 \text{ mW} / I_{(45 \text{ mW})} - I_{(5 \text{ mW})}$
Operating current	I_{op}	—	140	170	mA	$P_O = 50 \text{ mW}$
LD Operating voltage	V_{op}	—	2.3	2.7	V	$P_O = 50 \text{ mW}$
Lasing wavelength	λ	775	785	795	nm	$P_O = 50 \text{ mW}$
Beam divergence (parallel)	//	8	9.5	12	deg.	$P_O = 50 \text{ mW}$, FWHM
Beam divergence (perpendicular)		18	23	28	deg.	$P_O = 50 \text{ mW}$, FWHM
Monitor current	I_s	25	—	150	μA	$P_O = 5 \text{ mW}$, $V_{R(\text{PD})} = 5 \text{ V}$
Astigmatism	A_s	—	5	—	μm	$P_O = 5 \text{ mW}$, $NA = 0.4$

Typical Characteristic Curves



Typical Characteristic Curves (cont)

