

---

# HL7851G

GaAlAs Laser Diode

# HITACHI

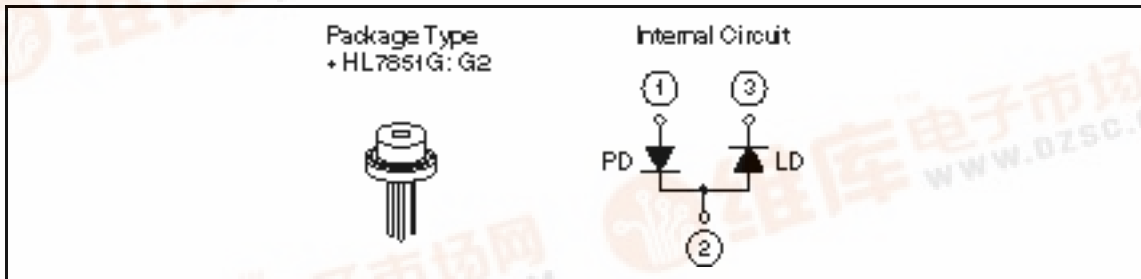
---

## Description

The HL7851G is a high power 0.78  $\mu\text{m}$  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



---

## HL7851G

---

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

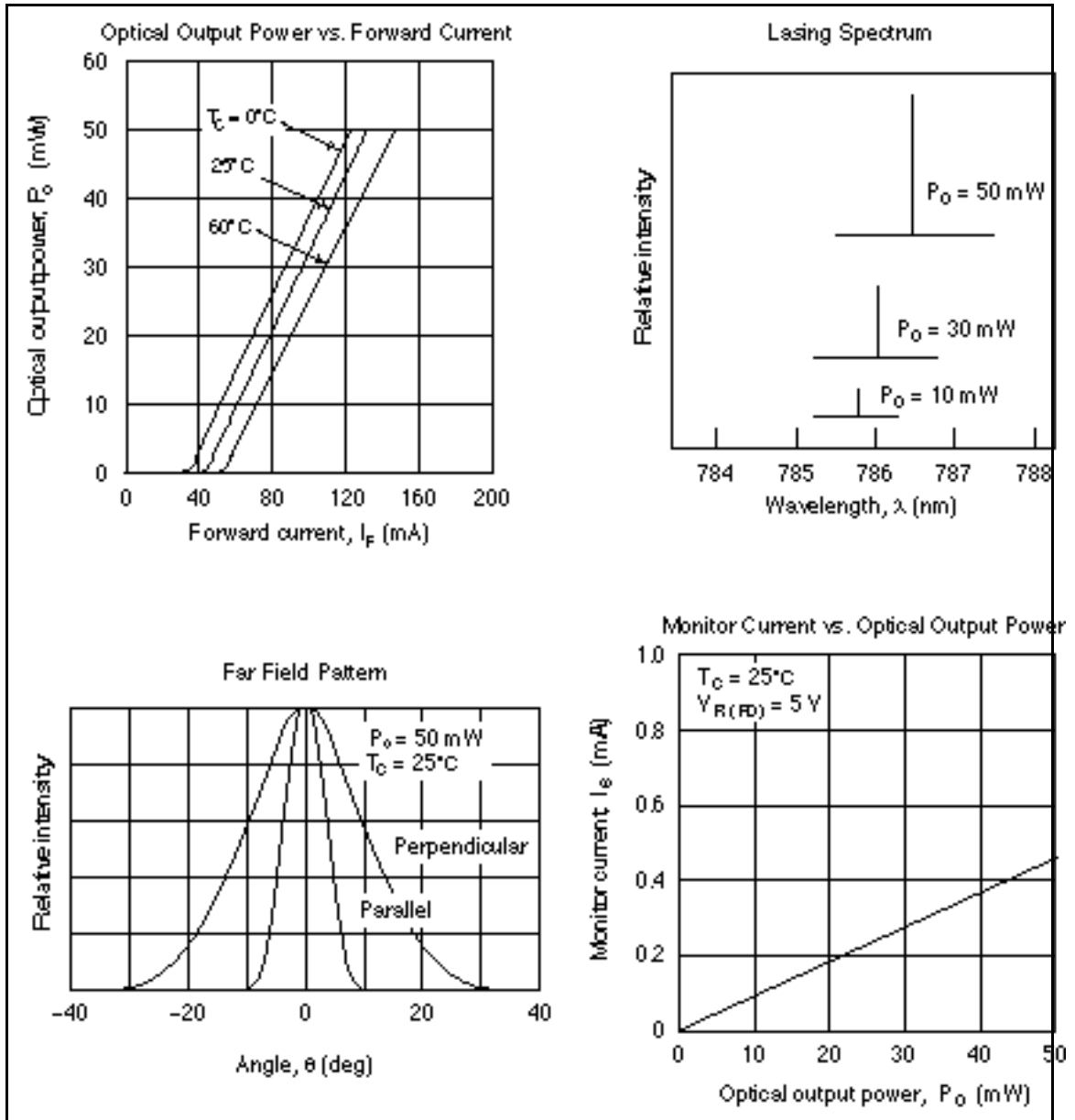
Item	Symbol	Rated Value	Unit
Optical output power	$P_O$	50	mW
Pulse optical output power	$P_{O(\text{pulse})}$	60* <sup>1</sup>	mW
LD reverse voltage	$V_{R(\text{LD})}$	2	V
PD reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	$T_{\text{opr}}$	-10 to +60	$^\circ\text{C}$
Storage temperature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

Note: 1. Maximum 50% duty cycle, maximum 1  $\mu\text{s}$  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	$I_{\text{th}}$	—	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	$I_{\text{op}}$	—	140	170	mA	$P_O = 50 \text{ mW}$
LD Operating voltage	$V_{\text{op}}$	—	2.3	2.7	V	$P_O = 50 \text{ mW}$
Lasing wavelength	$\lambda$	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	$\mu\text{A}$	$P_O = 5 \text{ mW}$ , $V_{R(\text{PD})} = 5 \text{ V}$
Astigmatism	$A_s$	—	5	—	$\mu\text{m}$	$P_O = 5 \text{ mW}$ , $\text{NA} = 0.4$

Typical Characteristic Curves



## HL7851G

### Typical Characteristic Curves (cont)

