HL7853MG

GaAlAs Laser Diode

HITACHI

Description

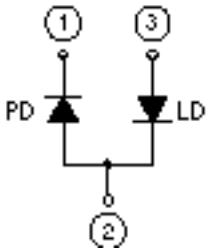
The HL7853MG is a high power 0.78 µm band GaAlAs laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source for optical disk memories, and various other types of optical equipment.

Features

- High output power: 40 mW CW
- Visible light output: λp = 785 mm Typ
- Small beam ellipticity: 9.5 : 23
- Built-in monitor photodiode
- Compact package (φ5.6 mm)

Package Type
▪ HL7853MG: MG

Internal Circuit



Absolute Maximum Ratings (T_C = 25°C)

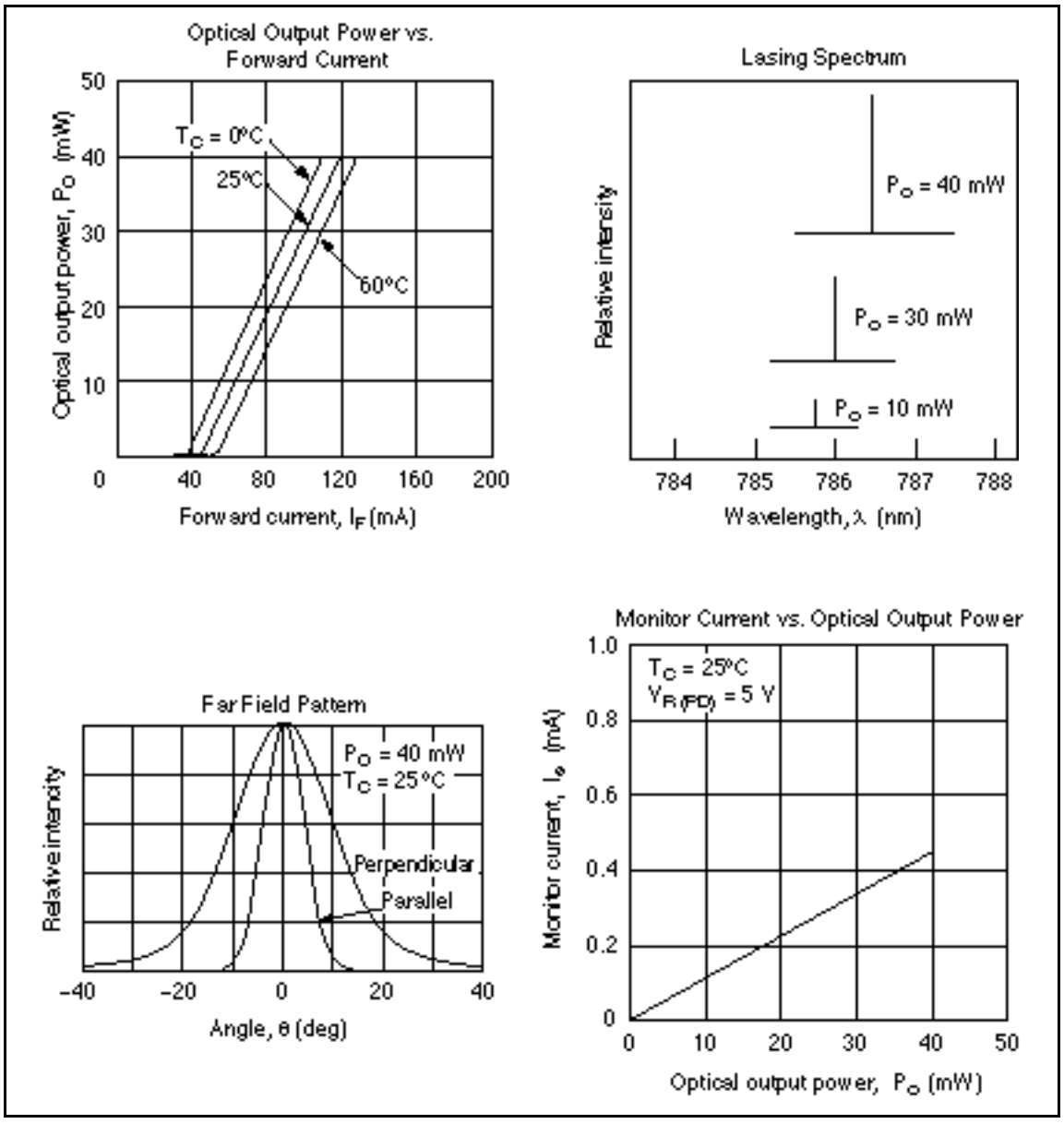
Item	Symbol	Rated Value	Unit
Optical output power	P_O	40	mW
Pulsed optical output power	$P_{O\ (pulse)}$	50*[1]	mW
LD reverse voltage	$V_{R\ (LD)}$	2	V
PD reverse voltage	$V_{R\ (PD)}$	30	V
Operating temperature	Topr	–10 to +60	°C
Storage temperature	Tstg	–40 to +85	°C

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

Optical and Electrical Characteristics (T_C = 25 ± 3 °C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical ouput power	P_O	40	—	—	mW	Kink free
Threshold current	Ith	—	45	70	mA	
Slope efficiency	η	0.35	0.55	0.7	mW/mA	24 mW/ { $I_{(32\ mW)}$–$I_{(8\ mW)}$}
LD operating voltage	Vop	—	2.3	2.7	V	P_O = 40 mW
Lasing wavelength	λp	775	785	795	nm	P_O = 40 mW
Beam divergence (parallel)	θ//	8	9.5	12	deg.	P_O = 40 mW, FWHM
Beam divergence (perpendicular)	θ	18	23	28	deg.	P_O = 40 mW, FWHM
Monitor current	Is	9	—	—	µA	P_O = 4 mW, $V_{R(PD)}$ = 5 V
Astigmatism	A_S	—	5	—	µm	P_O = 5 mW, NA = 0.4

Typical Characteristic Curves



Typical Characteristic Curves (cont)