

Description

The HL7843MG is a 0.78 μm band GaAlAs laser diode with a multi-quantum well (MQW) structure. It is especially suitable as a light source for laser beam printers with its low threshold current and low slope efficiency. Hermetic sealing of the package assures high reliability.

Features

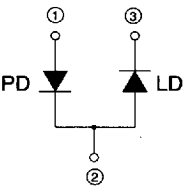
- Visible light output : $\lambda_p = 775$ to 795 nm
- Low slope efficiency: 0.2 mW/mA Typ.
- Low threshold current: 15 mA Typ.
- Low astigmatism: 5 μm Typ.
- Built-in monitor photodiode

Package Type

- HL7843MG: MG



Internal Circuit



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Absolute Maximum Ratings (T_C = 25°C)

Item	Symbol	Rated Value	Unit
Optical output power	P _O	5	mW
Pulsed 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	T _{opr}	-10 to +60	°C
Storage temperature	T _{stg}	-40 to +85	°C

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

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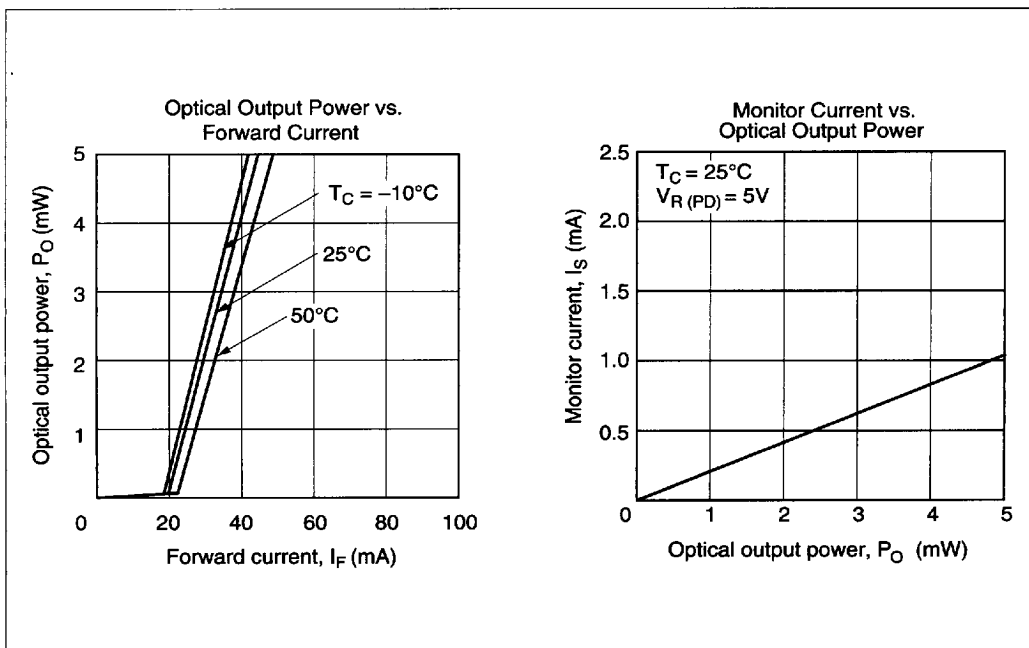
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HL7843MG

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

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	I_{th}	10	15	30	mA	
Optical output power	P_O	5	—	—	mW	Kink free
LD Operation voltage	V_{op}	—	—	2.3	V	$P_O = 5 \text{ mW}$
Slope efficiency	η	0.1	0.2	0.35	mW/mA	$3 \text{ mW} / (I_{(4 \text{ mW})} - I_{(1 \text{ mW})})$
Lasing wavelength	λ_p	775	785	795	nm	$P_O = 5 \text{ mW}$
Beam divergence (parallel)	$\theta_{//}$	8	10	13	deg.	$P_O = 5 \text{ mW}$, FWHM
Beam divergence (perpendicular)	$\theta_{\perp}$	20	24	30	deg.	$P_O = 5 \text{ mW}$, FWHM
Monitor current	I_S	0.5	1.0	1.5	mA	$P_O = 5 \text{ mW}$, $V_R (PD) = 5 \text{ V}$
Astigmatism	A_S	—	5	—	μA	$P_O = 5 \text{ mW}$, $NA = 0.4$
Droop	$-R_{th}$	—	—	10	%	$P_O = 5 \text{ mW}$, $f = 600 \text{ Hz}$

Typical Characteristic Curves



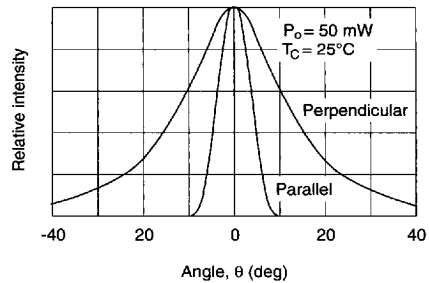
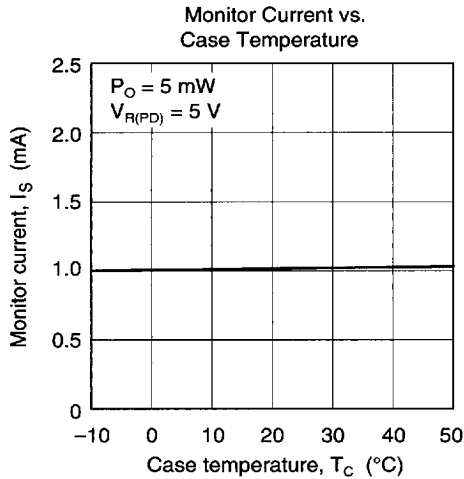
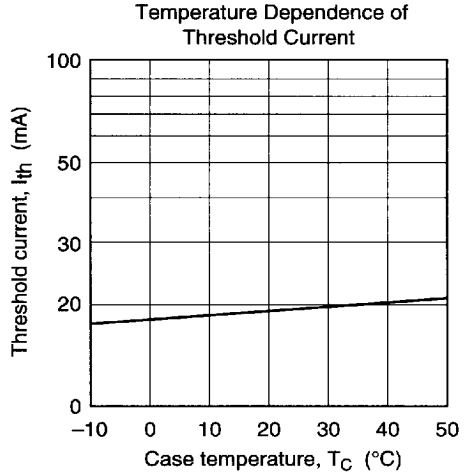
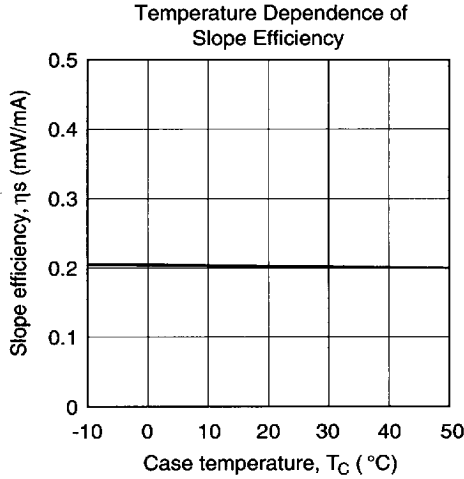
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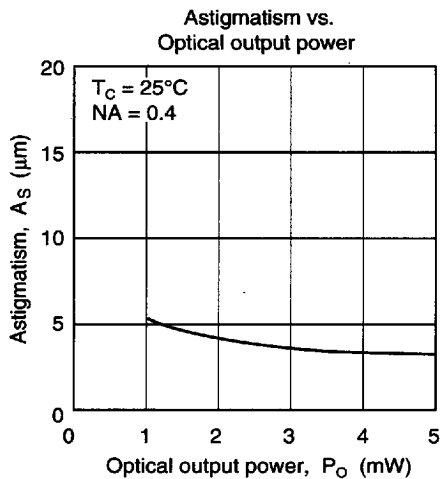
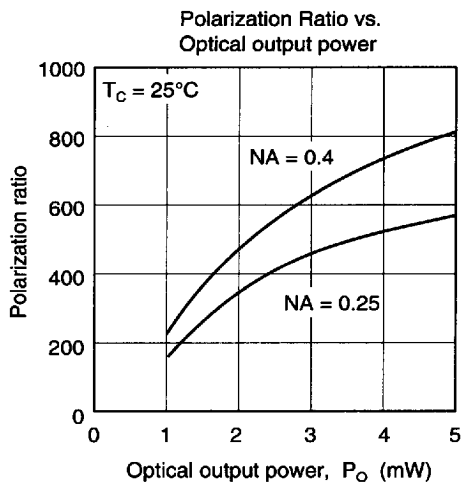
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Typical Characteristic Curves (cont.)



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Typical Characteristic Curves (cont.)



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188

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