
HL1326MF

InGaAsP Laser Diodes

HITACHI

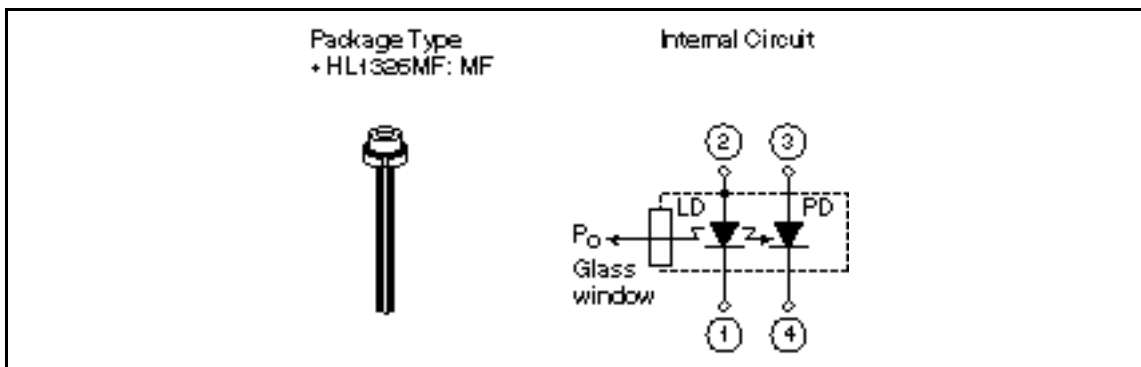
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Description

The HL1326MF is a 1.3 μm InGaAsP Fabry Perot laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source in short and medium range fiberoptic communication systems and other applied optical equipment. It has high optical power with low drive current and wide operating temperature range (-40 to $+85^{\circ}\text{C}$). The compact package is suitable for module assembly.

Features

- Σ Wide operating temperature range: $T_{opr} = -40$ to $+85^{\circ}\text{C}$
- Σ High output power: 10 mW (Pulse)
5 mW (CW)
- Σ Low operating current: $I_{op} (P_o = 5 \text{ mW}) = 20 \text{ mA}$ (Typ @ $T_C = 25^{\circ}\text{C}$)
 $I_{op} (P_o = 5 \text{ mW}) = 40 \text{ mA}$ (Typ @ $T_C = 85^{\circ}\text{C}$)



HL1326MF

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

Item	Symbol	Rated Value	Unit
Optical output power	P_O	10 (Pulse) * ¹	mW
		5 (CW)	mW
LD reverse voltage	$V_{R(LD)}$	2	V
PD reverse voltage	$V_{R(PD)}$	15	V
PD forward current	$I_{F(PD)}$	1	mA
Operating temperature	T_{opr}	-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +100	$^\circ\text{C}$

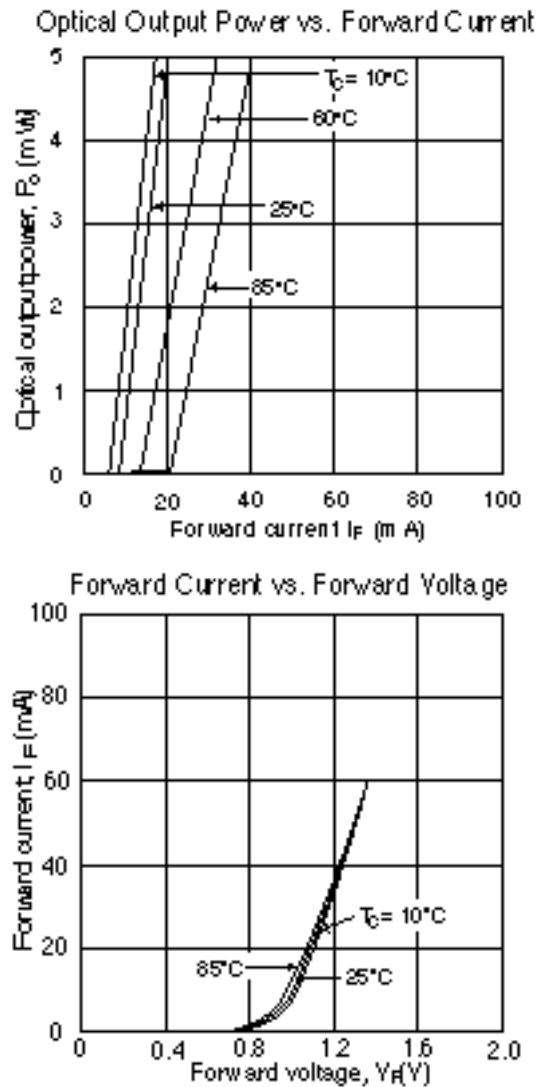
Note: 1. Maximum 50% duty cycle, maximum 1 μs pulse width

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

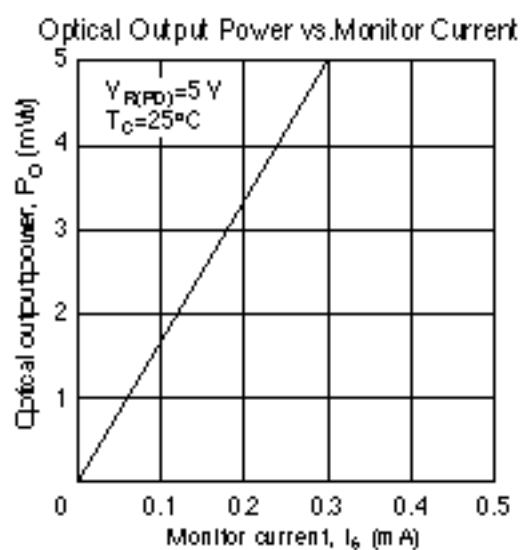
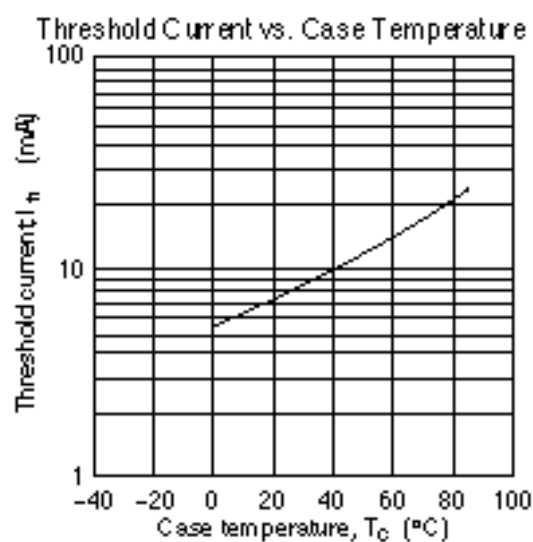
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	I_{th}	—	8	20	mA	
Optical output power	P_O	5	—	—	mW	Kink free* ¹
Slope efficiency	hs	0.3	0.4	—	mW/mA	$T_C = 25^\circ\text{C}$
		0.15	0.25	—		$T_C = 85^\circ\text{C}$
Lasing wavelength	λ_c	1280	1310	1340	nm	$P_O = 5 \text{ mW}$, RMS
Spectral width	s	—	2	—	nm	$P_O = 5 \text{ mW}$, RMS
Beam divergence (parallel)	$q_{//}$	—	30	—	deg.	$P_O = 5 \text{ mW}$, FWHM
Beam divergence (perpendicular)	$q^\perp$	—	40	—	deg.	$P_O = 5 \text{ mW}$, FWHM
Rise time	t_r	—	—	0.5	ns	10 to 90%
Fall time	t_f	—	—	0.5	ns	90 to 10%
Monitor current	I_s	100	—	—	μA	$P_O = 5 \text{ mW}$, $V_{R(PD)} = 5 \text{ V}$
PD dark current	$I_{(DARK)}$	—	—	350	nA	$V_{R(PD)} = 5 \text{ V}$
PD capacitance	C_t	—	15	20	pF	$V_{R(PD)} = 5 \text{ V}$, $f = 1 \text{ MHz}$
Photosensitivity saturation voltage	$V_{R(S)}$	—	—	2	V	

Note: 1. Kink free up to 5mW is confirmed at the temperatures of 10 $^\circ\text{C}$, 25 $^\circ\text{C}$ and 85 $^\circ\text{C}$.

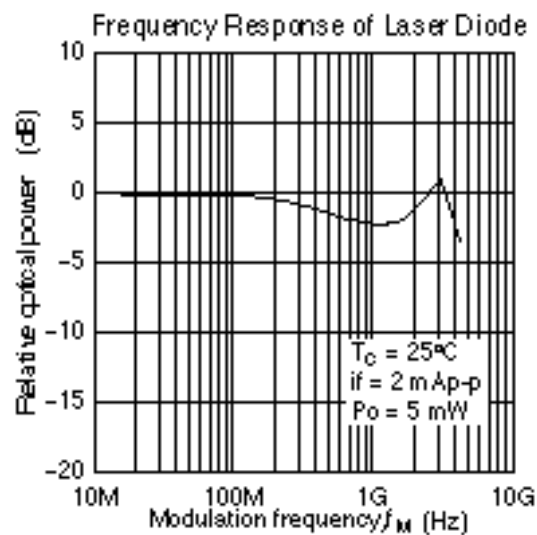
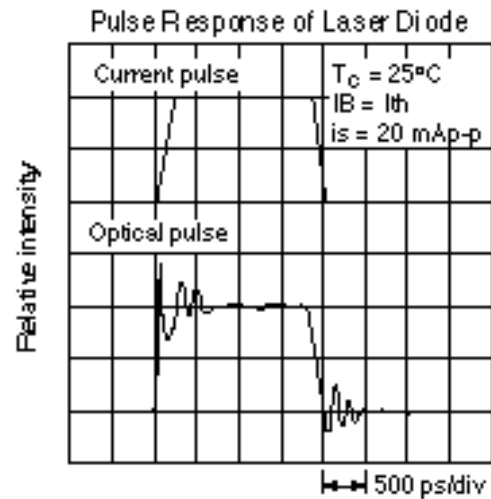
Typical Characteristic Curves

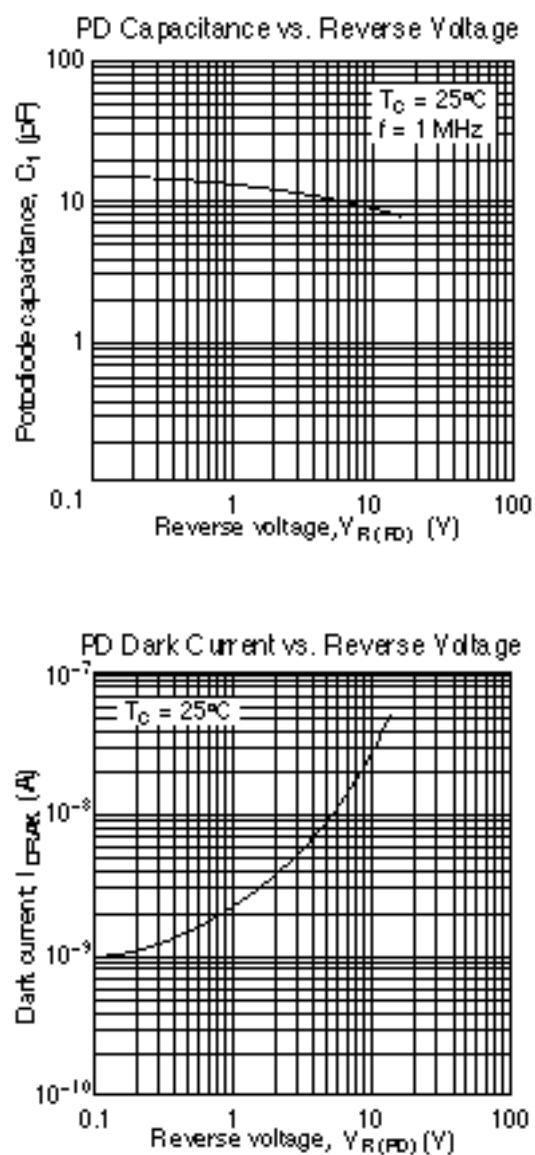


Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)

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