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# HL1326MF

InGaAsP Laser Diodes

# HITACHI

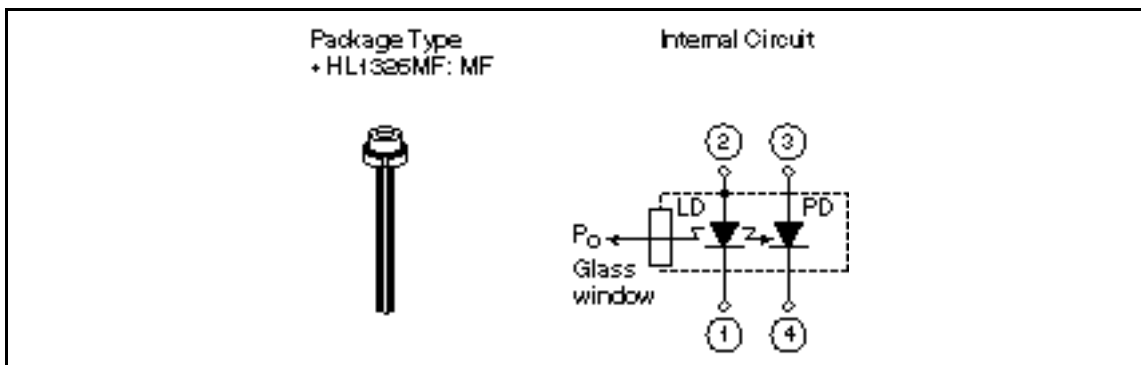
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## Description

The HL1326MF is a 1.3  $\mu\text{m}$  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

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



## HL1326MF

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

Item	Symbol	Rated Value	Unit
Optical output power	$P_O$	10 (Pulse) * <sup>1</sup>	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	$^\circ\text{C}$

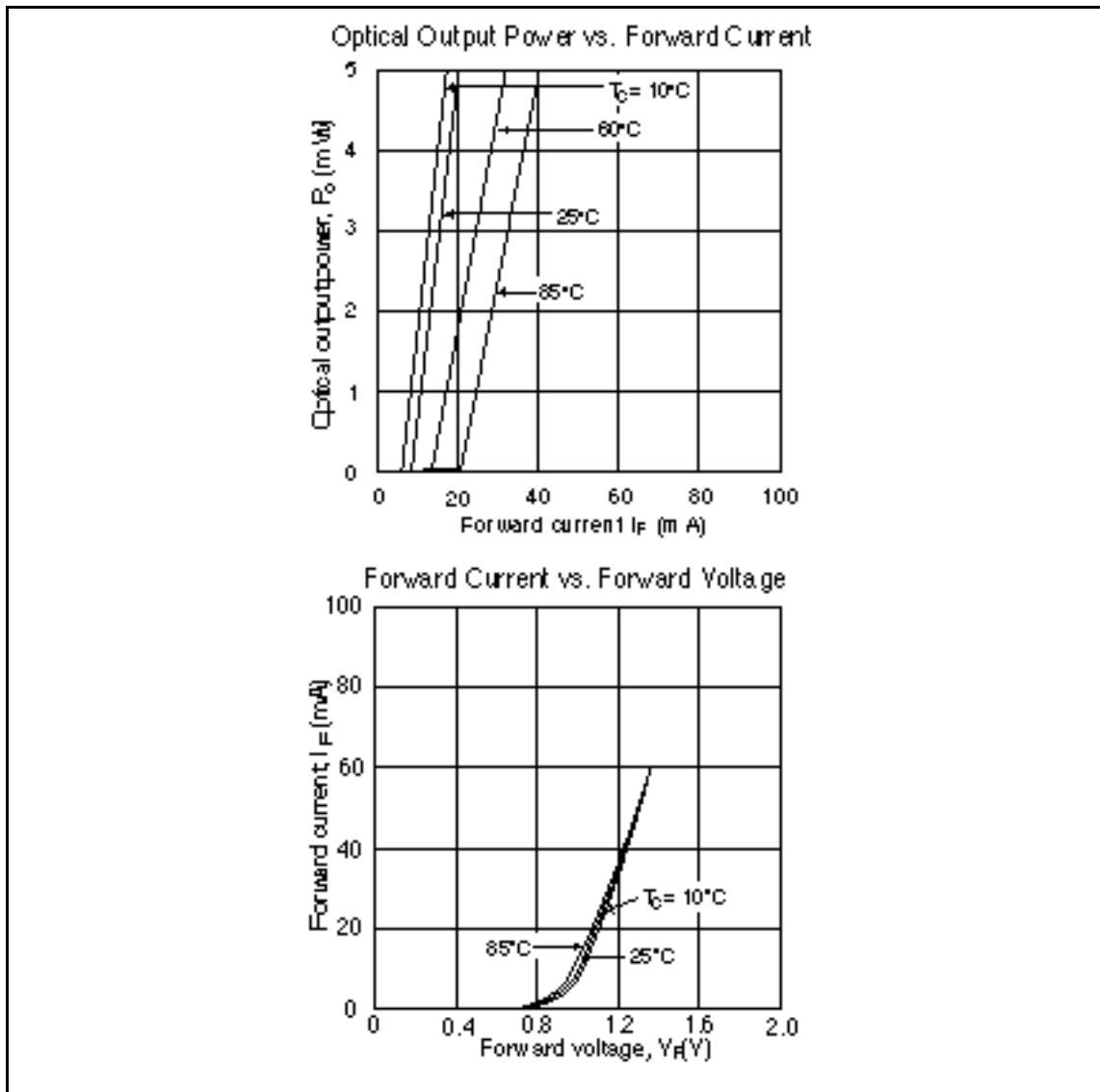
Note: 1. Maximum 50% duty cycle, maximum 1  $\mu\text{s}$  pulse width

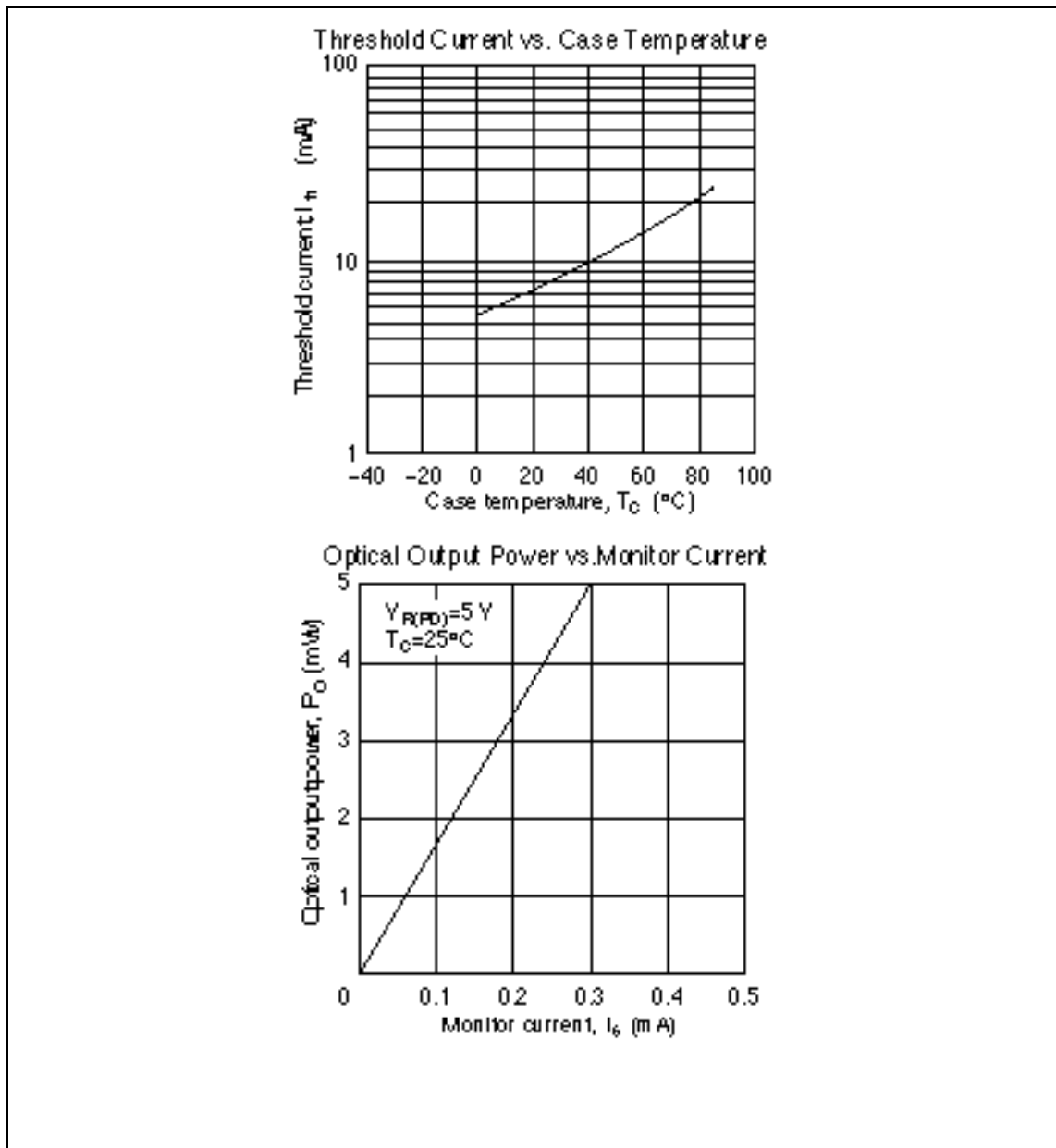
### Optical and Electrical Characteristics ( $T_C = 25^\circ\text{C}$ )

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	$I_{th}$	—	8	20	mA	
Optical output power	$P_O$	5	—	—	mW	Kink free* <sup>1</sup>
Slope efficiency	$s$	0.3	0.4	—	mW/mA	$T_C = 25^\circ\text{C}$
		0.15	0.25	—		$T_C = 85^\circ\text{C}$
Lasing wavelength	$c$	1280	1310	1340	nm	$P_O = 5 \text{ mW, RMS}$
Spectral width		—	2	—	nm	$P_O = 5 \text{ mW, RMS}$
Beam divergence (parallel)	//	—	30	—	deg.	$P_O = 5 \text{ mW, FWHM}$
Beam divergence (perpendicular)		—	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	—	—	$\mu\text{A}$	$P_O = 5 \text{ mW, } V_{R(PD)} = 5 \text{ V}$
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	

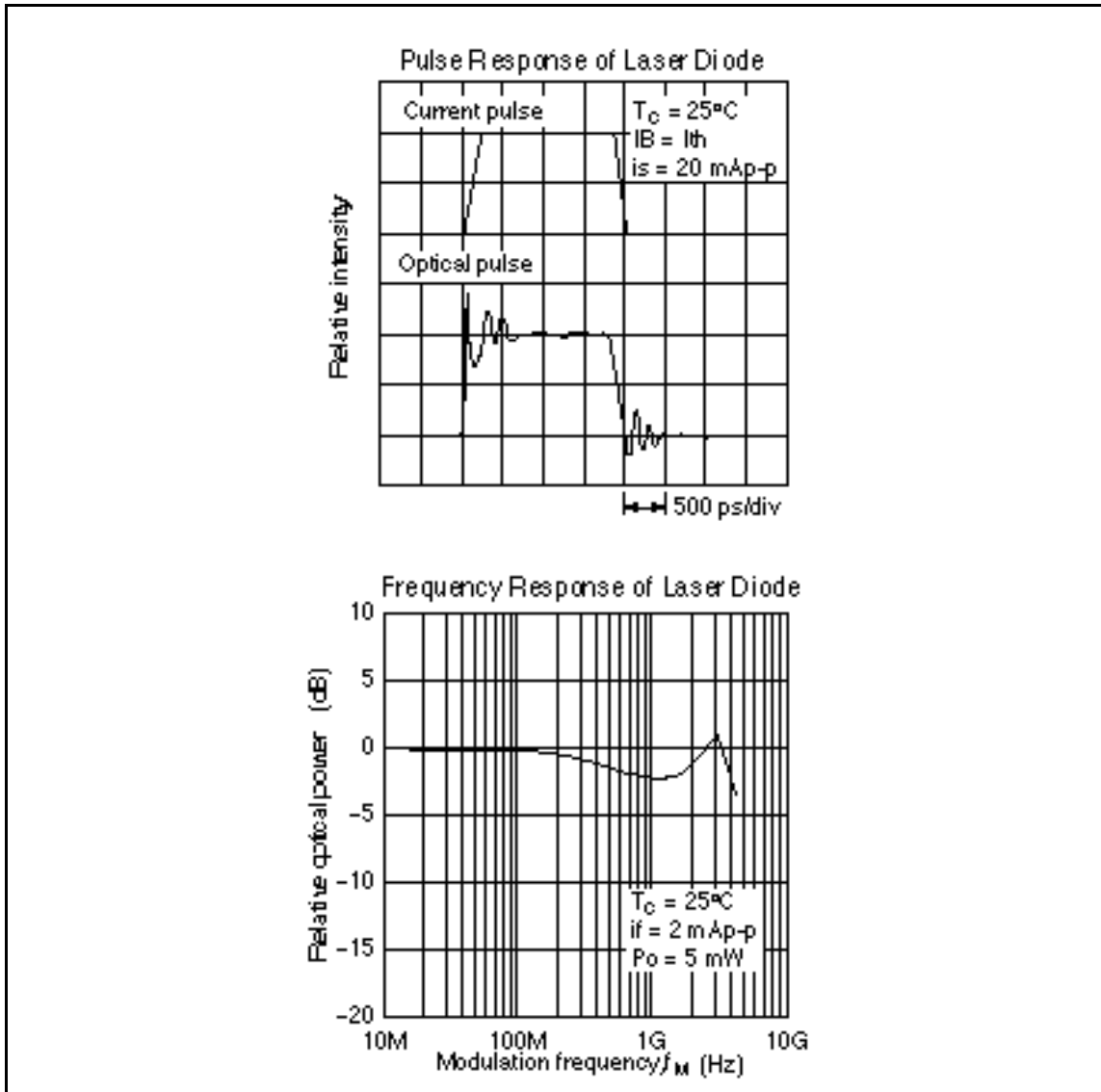
Note: 1. Kink free up to 5mW is confirmed at the temperatures of 10  $^\circ\text{C}$ , 25 $^\circ\text{C}$  and 85 $^\circ\text{C}$ .

Typical Characteristic Curves

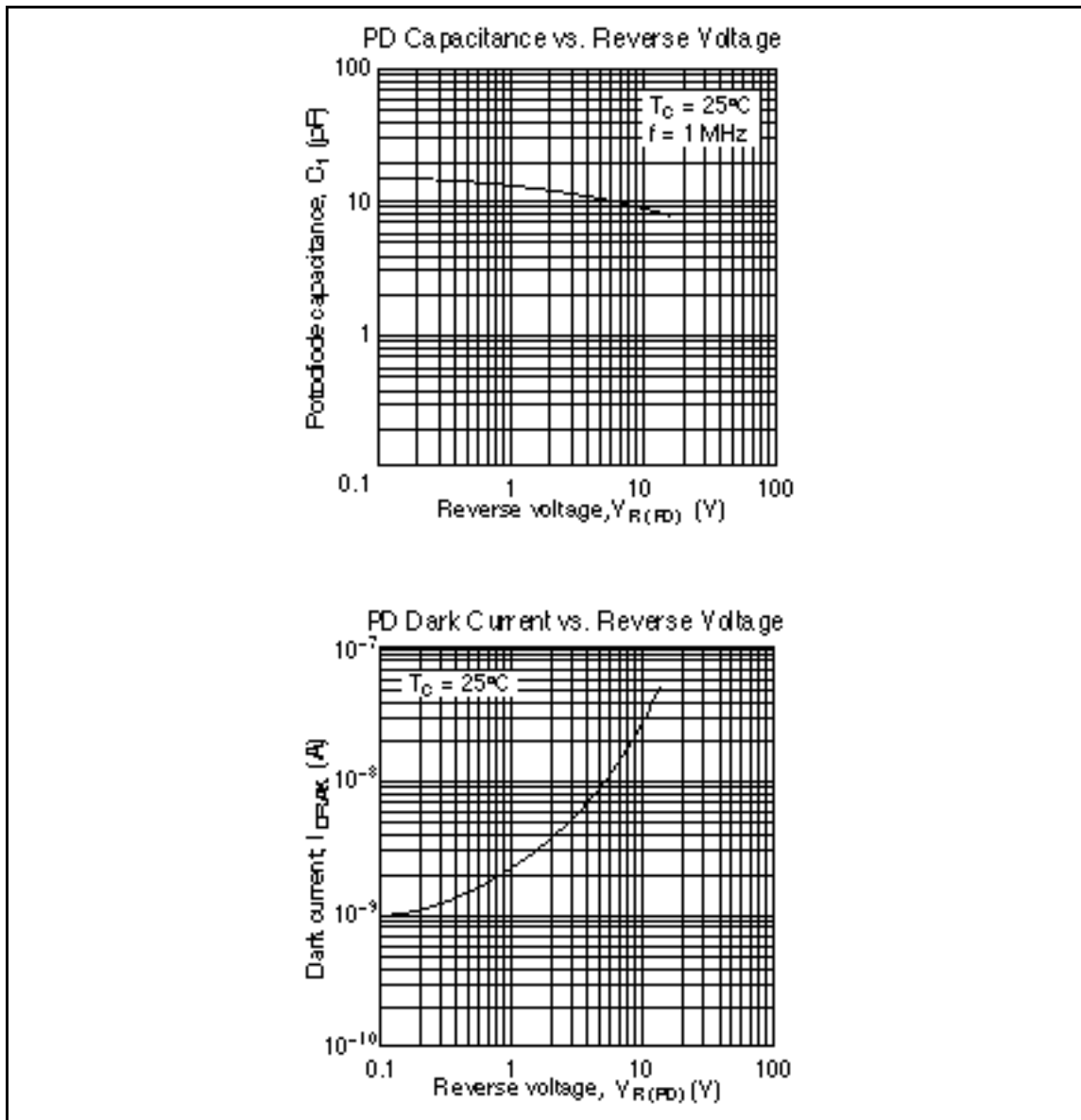


**Typical Characteristic Curves (cont)**

Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)

