TYPE NAME

ML776H11F, ML774F11F

DESCRIPTION

ML7XX11 series are MQW*—DFB** laser diodes emitting light beam around 1310nm.

They are well suited for light source in longdistance digital transmission systems.

The ML776H11F are hermetically sealed devices having the photodiode for optical output monitoring.

* MQW : Multiple Quantum Well

* *DFB : Distributed Feedback

FEATURES

- Low threshold current (typical 10mA)
- Stable single transverse mode oscillation
- High-side mode suppression ratio : typical 40dB (Tc= −40 to +85℃)
- High speed pulse response (rise/fall time typical 0.2nsec)
- Excellent temperature characteristics

APPLICATION

Wide temperature range digital transmission system

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
P_O	Light output power	CW	6	mW
V_{RL}	Reverse Voltage (Laser diode)	—	2	V
V_{RD}	Reverse Voltage (Photodiode)	—	20	V
I_{FD}	Forward current (Photodiode)	—	2	mA
T_C	Case temperature	—	−40～+85	℃
T_{stg}	Storage temperature	—	−40～+100	℃

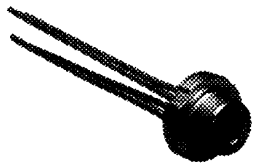
ELECTRICAL/OPTICAL CHARACTERISTICS (T_C = 25℃)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{th}	Threshold current	CW	—	6	20	mA
I_{OP}	Operating current	CW,P_O = 5mW	—	18	40	mA
V_{OP}	Operating voltage	CW,P_O = 5mW	—	1.1	1.8	V
η	Slope efficiency	CW,P_O = 5mW	0.3	0.4	—	mW/mA
λ_P	Peak wavelength	CW,P_O = 5mW	1290	1310	1330	nm
$\theta_{//}$	Beam divergence angle (parallel)	CW,P_O = 5mW	—	25	35	deg.
$\theta_{\perp}$	Beam divergence angle (perpendicular)	CW,P_O = 5mW	—	30	40	deg.
I_m	Monitoring output current (Photodiode)	CW,P_O = 5mW,V_{RD} = 1V,R_L* = 10Ω	—	0.2	—	mA
t_r,t_f	Rise and fall time	I_F = I_{th},P_O = 5mW,10%～90%	—	0.2	0.4	ns
SMSR	Side mode suppression ratio	CW,P_O = 5mW,−40～+85℃	30	40	—	dB

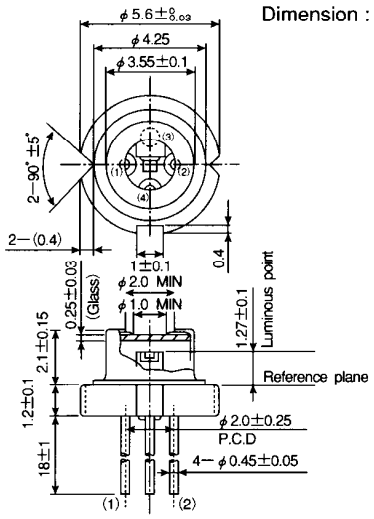
* R_L : Load resistance of photodiode

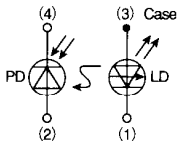
OUTLINE DRAWINGS

ML776H11F
ML774F11F

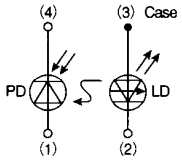


Dimension : mm





ML776H11F



ML774F11F

TYPICAL CHARACTERISTICS

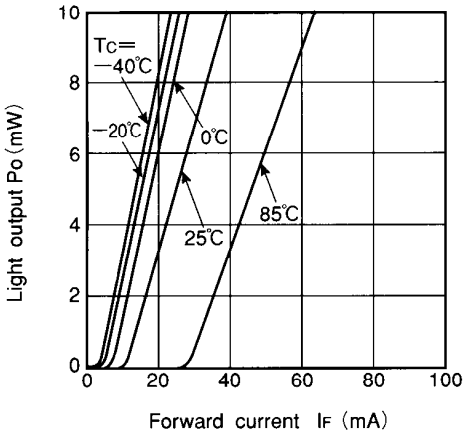


Fig.1 Light output vs. forward current

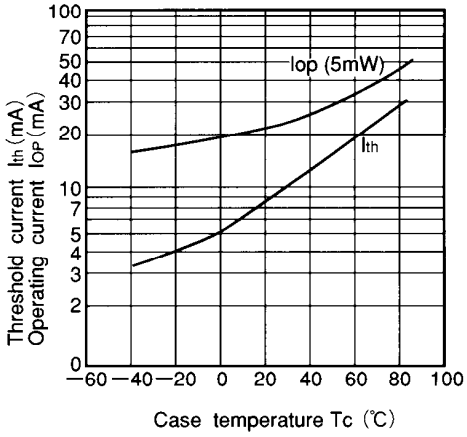


Fig.2 Temperature dependence of Ith and Iop

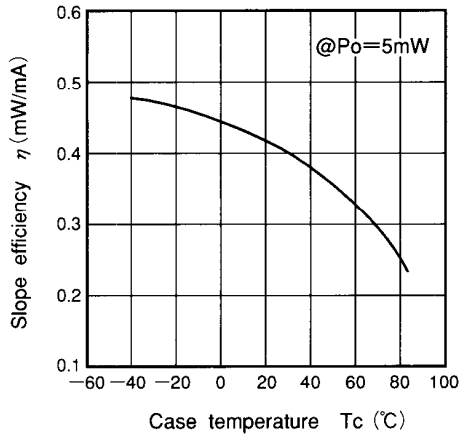


Fig.3 Temperature dependence of slope efficiency

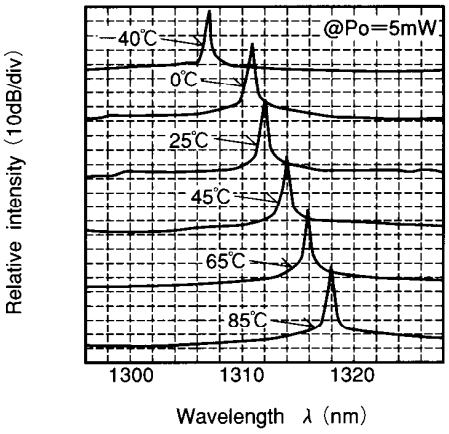


Fig.5 Spectrum

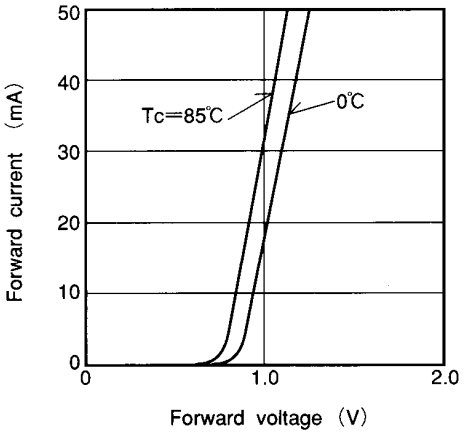


Fig.5-1 Foward current vs. voltage

TYPICAL CHARACTERISTICS (Cont.)

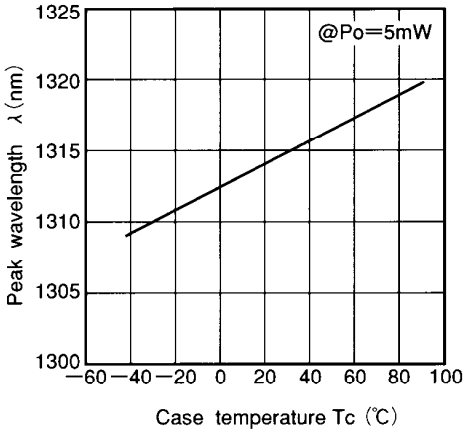


Fig.6 Temperature dependence of peak wavelength

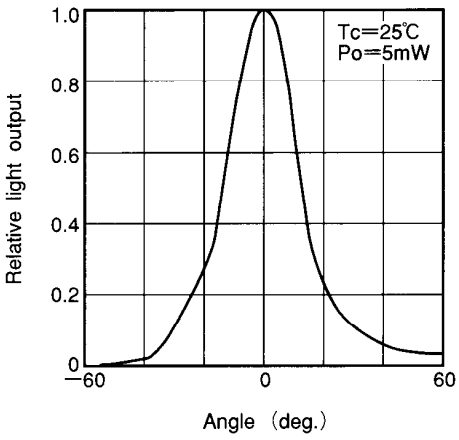


Fig.7-1 Far field pattern θ //

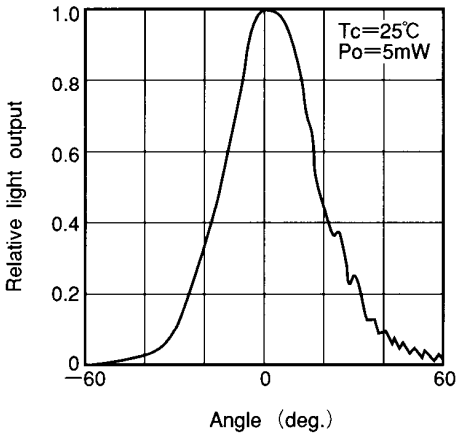


Fig.7-2 Far field pattern θ ⊥

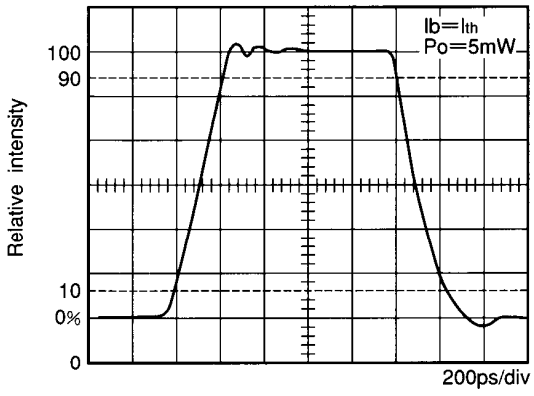


Fig.8 Pulse respose characteristics

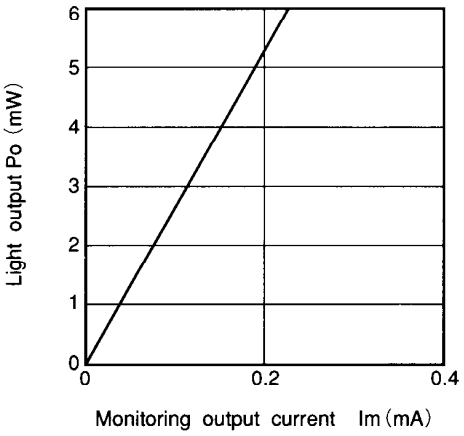


Fig.9 Light output vs. monitoring output current