TYPE NAME

ML701B8R,ML725B8F,ML725C8F ML720J8S,ML720K8S

DESCRIPTION

ML7XX8 series are InGaAsP laser diodes which provides a stable, single transverse mode oscillation with emission wavelength of 1310nm and standard continuous light output of 10mW.

ML7XX8 are hermetically sealed devices having the photodiode for optical output monitoring. This high-performance, high reliability, and long-life laser diode is suitable for such applications as the light sources for long-distance optical communication systems.

FEATURES

- ●1310nm typical emission wavelength
- ●Low threshold current, low operating current
- ●High-power, wide temp. range operation (Po=10mW,Tc=−40～+85℃)
- ●High reliability, long operation life
- ●Have a lens-cap (ML725C8F,ML720K8S)
- ●MQW* active layer
  * : Multiple Quantum Well

APPLICATION

Optical communication system

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings (Note1)	Unit
P_O	Light output power	—	10 〔7〕	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 (Note1)			Unit
			Min.	Typ.	Max.	
I_{th}	Threshold current	CW	—	5	15	mA
I_{OP}	Operating current	CW,P_O = 5mW	—	20	35	mA
V_{OP}	Operating voltage	CW,P_O = 5mW	—	1.1	1.5	V
η	Slope efficiency	CW,P_O = 5mW	0.3 〔0.2〕	0.5〔0.35〕	—	mW/mA
λc	Center wavelength	CW,P_O = 5mW	1290	1310	1330	nm
$\triangle\lambda$	Spectral width (RMS)	CW,P_O = 5mW	—	1	2	nm
$\theta_{//}$	Beam divergence angle (parallel)	CW,P_O = 5mW	—	25〔11〕	—	deg.
$\theta_{\perp}$	Beam divergence angle (perpendicular)	CW,P_O = 5mW	—	30〔11〕	—	deg.
t_r,t_f	Rise and fall times	I_F = I_{th},P_O = 5mW,10～90%	—	0.3	0.7	ns
I_m	Monitoring output current (Photodiode)	CW,P_O = 5mW,V_{RD} = 1V	0.1	0.5	—	mA
I_D	Dark current (Photodiode)	V_{RD} = 10V	—	0.01	0.1	μA
C_t	Capacitance (Photodiode)	V_{RD} = 10V,f = 1MHz	—	10	20	pF
P_f (Note 2)	Fiber coupled power	CW,P_O = 5mW,SI10/125	〔0.4〕	〔0.8〕	〔—〕	mW
D_f (Note 3)	Fiber coupled distance	CW,P_O = 5mW,SI10/125 (Note 3)	〔5.0〕	〔5.8〕	〔6.2〕	mm

Note 1 : Limits in 〔 〕 applied to the lens-cap type.

Note 2 : P_f,D_f are applied to the lens-cap type.

Note 3 : D_f is a distance from the reference plane to the fiber.

TYPICAL CHARACTERISTICS

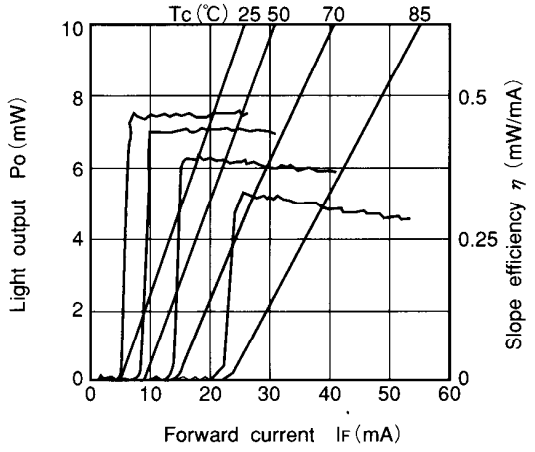


Fig.1 Light output vs. forward current

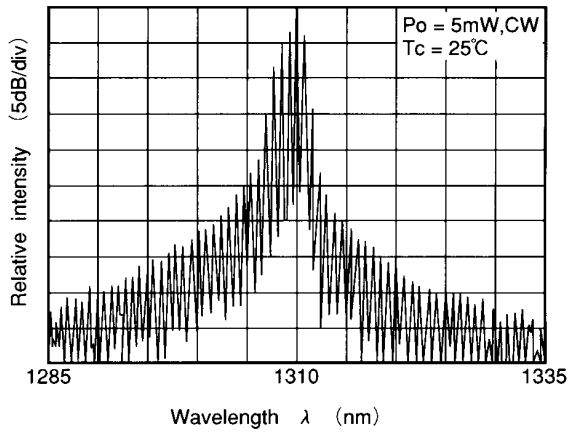


Fig.52 Spectrum

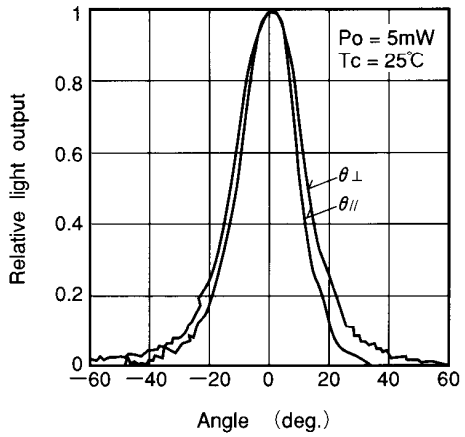
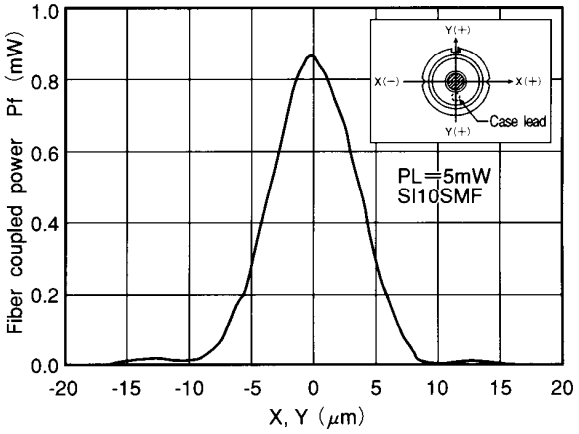


Fig.3 Far field pattern



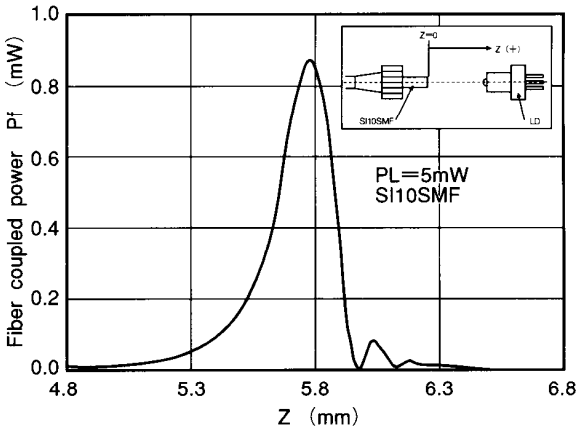
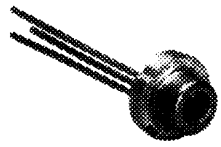


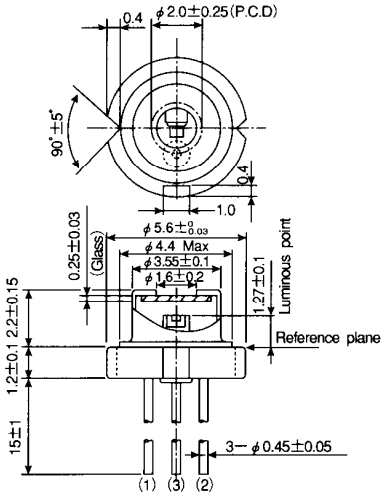
Fig.4 Fiber coupling characteristics
(ML725C8F,ML720K8S)

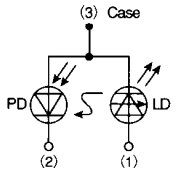
OUTLINE DRAWINGS

ML701B8R

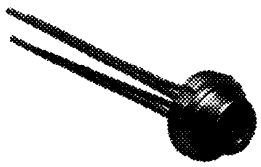


Dimension : mm





ML725B8F
ML720J8S



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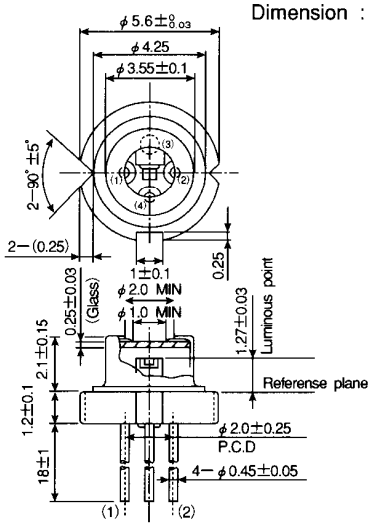

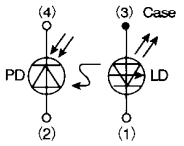

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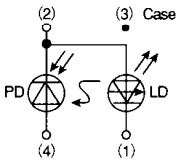
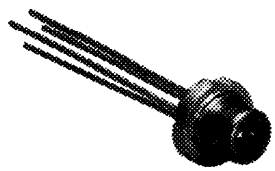


ML720J8S

ML725C8F
ML720K8S



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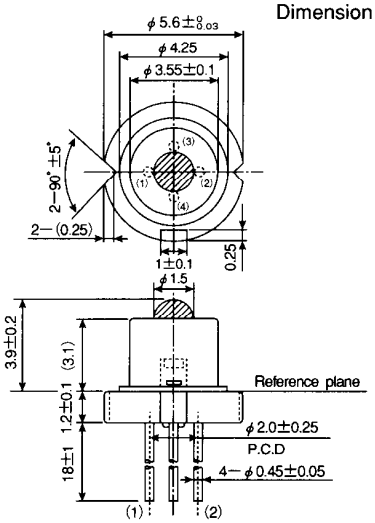

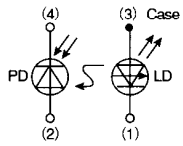

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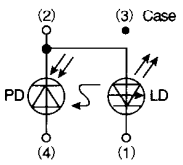

ML720K8S