

MITSUBISHI LASER DIODES
ML7XX8 SERIES
 InGaAsP – MQW – FP LASER DIODES

Notice: Some parametric limits are subject to change.

**TYPE
NAME**

**ML720J8S, ML720K8S
ML725B8F, ML725C8F, ML725J8F**

DESCRIPTION

ML7XX8 series are InGaAsP laser diodes which provide a stable, single transverse mode oscillation with emission wavelength of 1310nm and standard continuous light output of 5mW.

ML7XX8 are hermetically sealed devices having the photo diode for optical output monitoring. This is suitable for such applications as the light sources for optical communication systems.

FEATURES

- 1310nm typical emission wavelength, FP-LDs
- Low threshold current, low operating current
- Wide temperature range operation (-40 to 85°C)
- φ5.6mm TO-CAN package
 Flat window cap : ML720J8S, ML725B8F
 Ball lens cap : ML720K8S, ML725C8F
 Aspherical lens cap : ML725J8F

APPLICATION

- Optical communication system

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	10[7]	mW
VRL	Laser reverse voltage	-	2	V
VRD	PD reverse voltage	-	20	V
IFD	PD forward current	-	2	mA
Tc	Operation temperature	-	-40 to +85	°C
Tstg	Storage temperature	-	-40 to +125	°C

ELECTRICAL/OPTICAL CHARACTERISTICS(Tc=25°C)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Ith	Threshold current	CW	3	5	15	mA
Iop	Operation current	CW, Po=5mW	10	20	35	mA
Vop	Operating voltage	CW, Po=5mW	---	1.1	1.5	V
η	Slope efficiency	CW, Po=5mW	0.3[0.2]	0.5[0.35]	0.7[0.5]	mW/mA
λc	Center wavelength	CW, Po=5mW	1290	1310	1330	nm
Δλ	Spectral Width	CW, Po=5mW,RMS(-20dB)	---	1.0	2.0	nm
θ//	Beam divergence angle(parallel)	CW, Po=5mW	---	25[11]	---	deg.
θ⊥	Beam divergence angle(perpendicular)	CW, Po=5mW	---	30[11]	---	deg.
tr,tf	Rise and Fall time (20%-80%)	Ib=Ith,Po=5mW,10-90%	---	0.3	0.7	nsec
Im	Monitor Current (PD)	CW, Po=5mW, VRD=1V,	0.1	0.5	0.9	mA
Id	Dark Current (PD)	VRD=10V	---	---	0.1	μA
Ct	Capacitance (PD)	VRD=10V, f=1MHz	---	10	20	pF
Pf <2>	Fiber coupled power	CW, PL=5mW,S110/125	[0.4/1.5]	[0.8/2.0]	[---]	mW
Df <2>	Fiber coupled distance	CW, PL=5mW,S110/125 <3>	[5.0/6.0]	[5.8/7.5]	[6.2/9.0]	mm

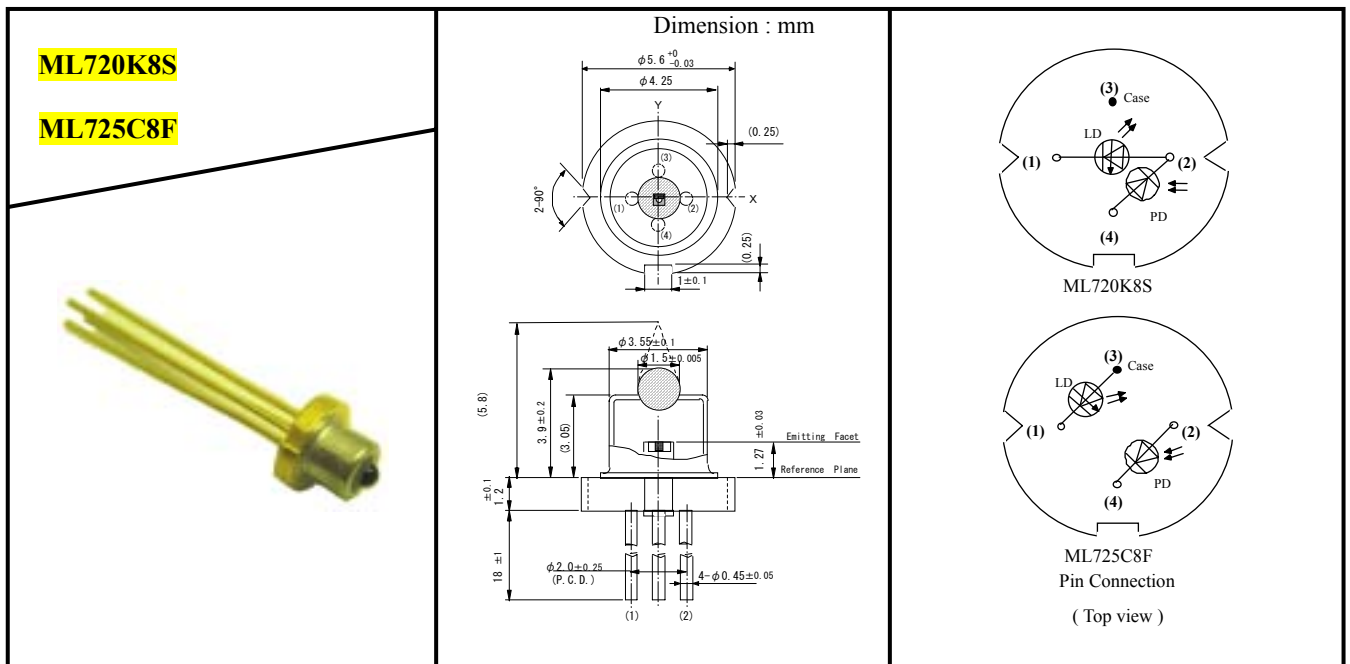
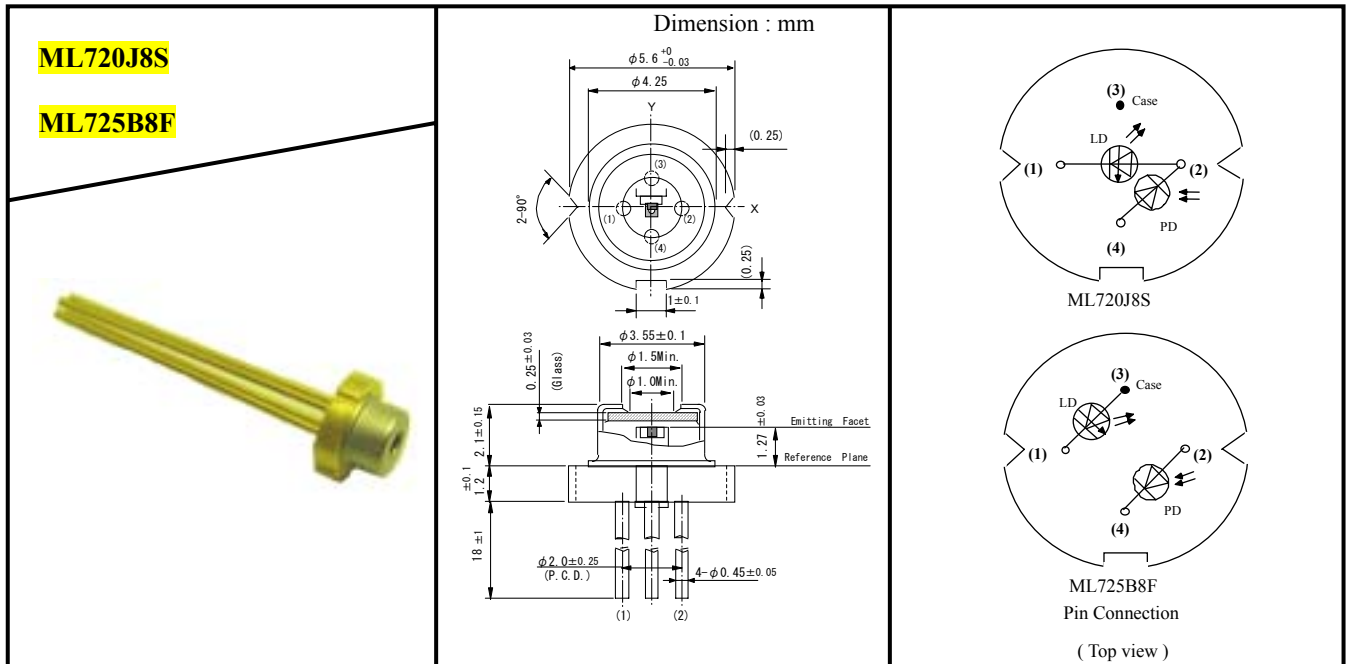
Note : <1> [] applied to the lens cap type.

Note : <2> Pf, Df are applied to the [ball lens type/aspherical lens type].

Note : <3> Df is a distance between reference plane of the base to the fiber.

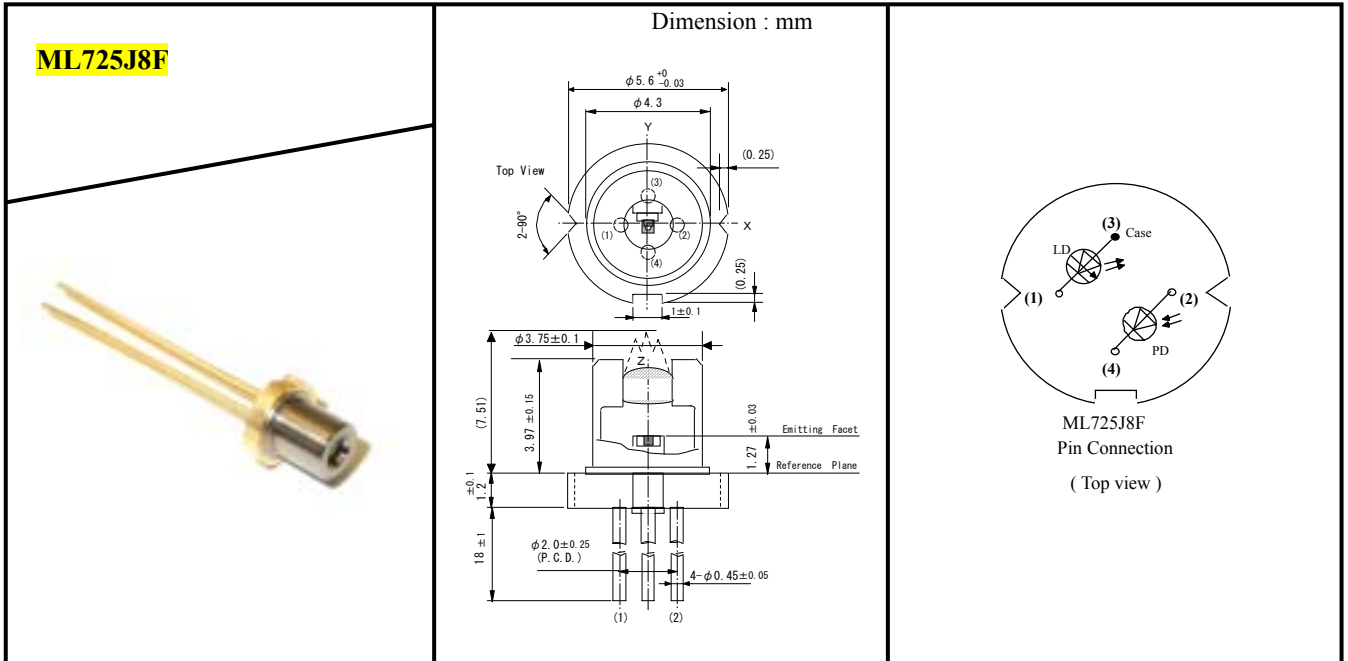
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OUTLINE DRAWINGS



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TYPICAL CHARACTERISTICS

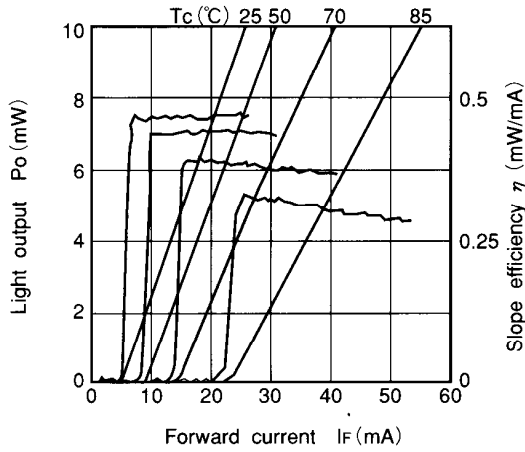


Fig.1 Light output vs. forward current

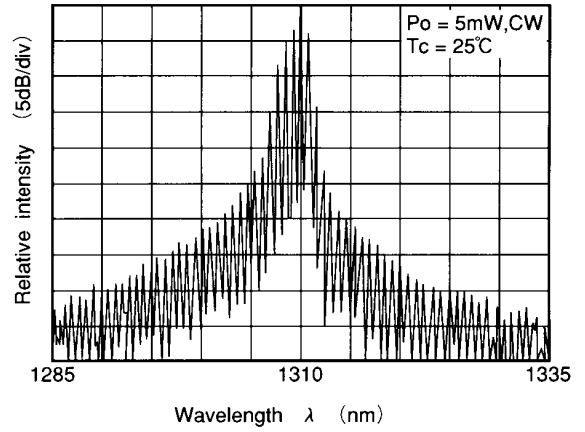


Fig.52 Spectrum

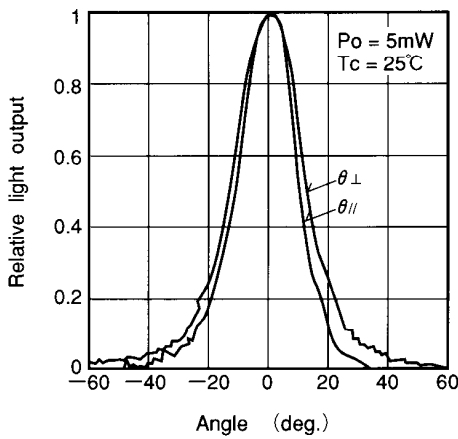


Fig.3 Far field pattern

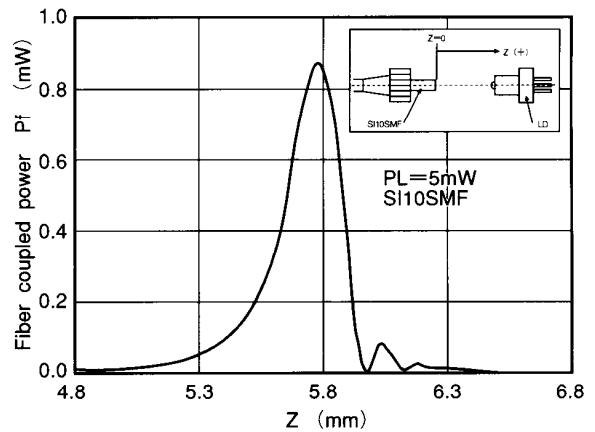
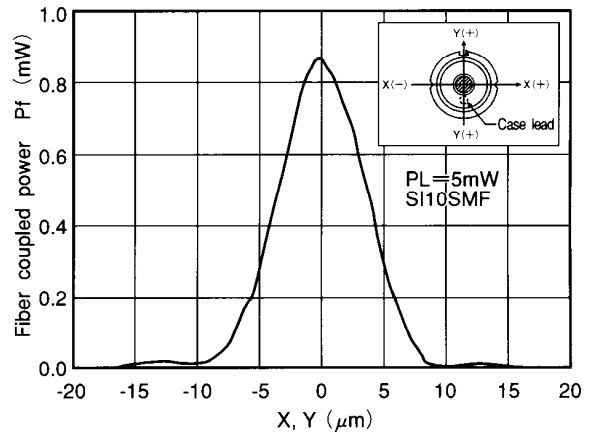


Fig.4 Fiber coupling characteristics
(ML725C8F, ML720K8S)