

MITSUBISHI LASER DIODES  
**ML7xx19 SERIES**  
 1310nm InGaAsP FP LASER DIODES

Notice: Some parametric limits are subject to change.

**TYPE  
NAME**

**ML720J19S, ML720K19S, ML728C19S  
ML725B19F, ML725C19F**

**DESCRIPTION**

ML7XX19 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.

ML7XX19 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 up to 2.5Gbps transmission applications.

**FEATURES**

- 1310nm typical emission wavelength, FP-LDs
- Wide temperature range operation(-40 to 85°C)
- φ5.6mm TO-CA N package  
Flat window cap : ML720J19S, ML725B19F  
Ball lens cap : ML720K19S, ML725C19F
- φ3.8mm TO-CA N package  
Ball lens cap : ML728C19S

**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 +100	°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[3mW]	10	20	30	mA	
Vop	Operating voltage	CW, Po=5mW[3mW]	---	1.1	1.5	V	
η	Slope efficiency	CW, Po=5mW[3mW]	0.3[0.2]	0.45[0.35]	0.6[0.5]	mW/mA	
λc	Center wavelength	CW, Po=5mW[3mW]	1290	1310	1330	nm	
Δλ	Spectral Width	CW, Po=5mW[3mW],RMS(-20dB)	---	1.0	2.0	nm	
θ//	Beam divergence angle(parallel)	CW, Po=5mW[3mW]	---	25[11]	---	deg.	
θ⊥	Beam divergence angle(perpendicular)	CW, Po=5mW[3mW]	---	30[11]	---	deg.	
tr,tf	Rise and Fall time (20%-80%)	Ib=Ith,Po=5mW[3mW],20-80%	---	0.1	0.15	nsec	
Im	Monitor Current (PD)	CW, Po=5mW[3mW], 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>		CW, PL=3mW,S110/125	0.2	0.5	---	mW	
Df <2>	Fiber Coupling characteristics at peak coupling <3>	CW, PL=3mW,S110/125	ML720K19S	5.0	5.8	6.2	mm
			ML725C19F				
			ML728C19S	3.0	3.4	3.8	

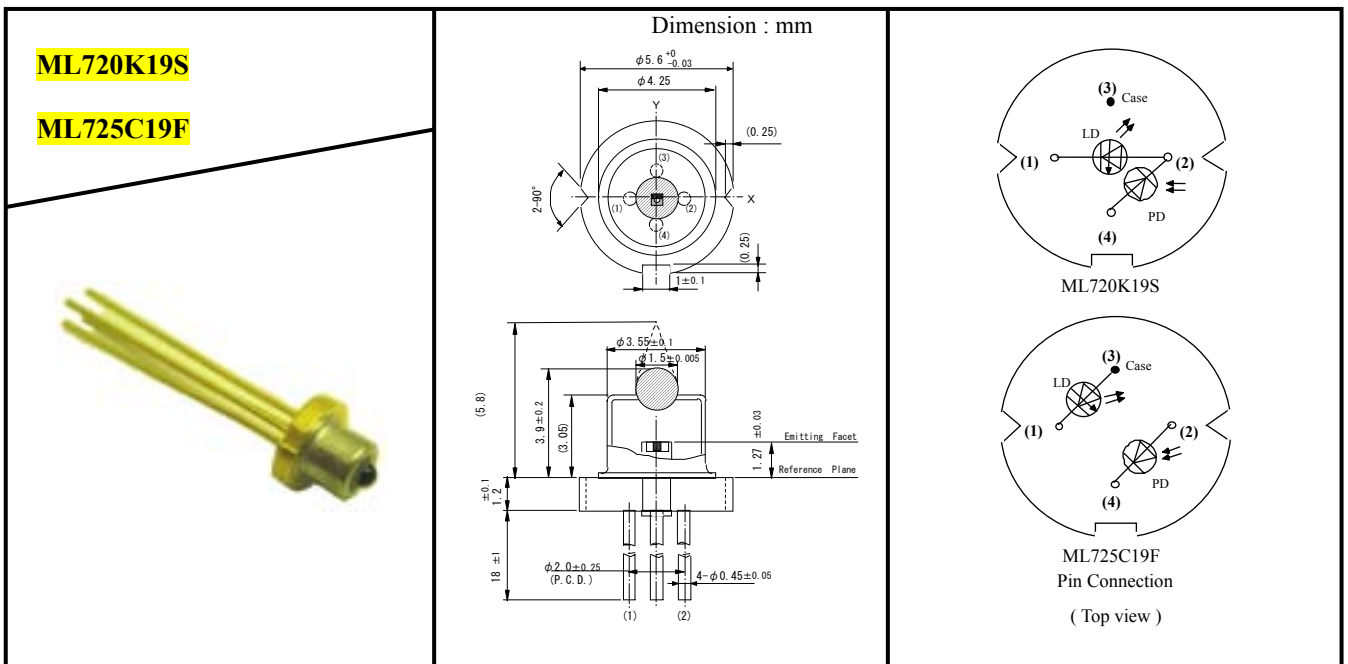
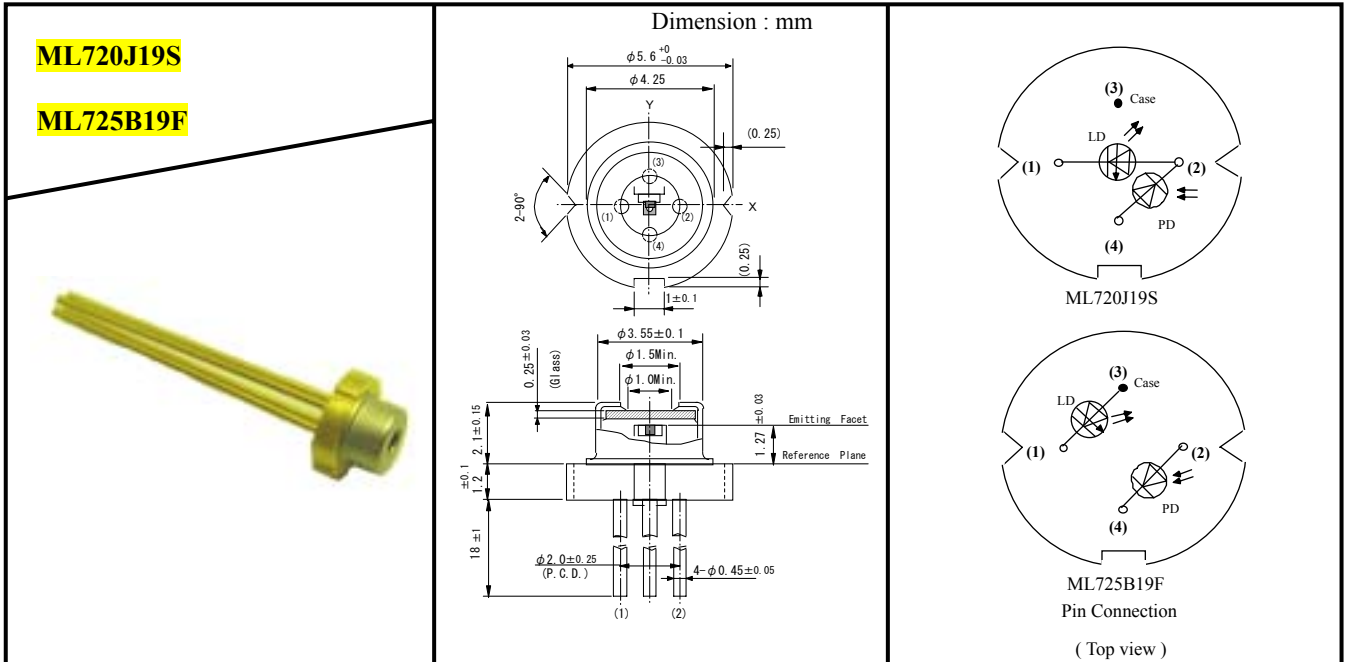
Note : <1> [ ] applied to the lens cap type.

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

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

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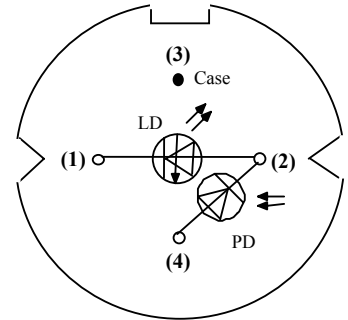
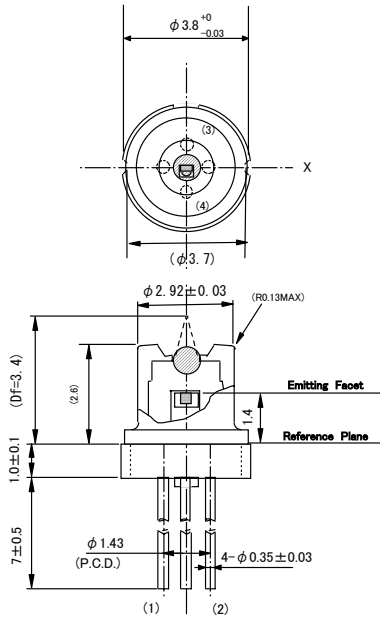
OUTLINE DRAWINGS



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OUTLINE DRAWINGS

**ML728C19S**



ML728C19S  
 Pin Connection  
 ( Top view )

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TYPICAL CHARACTERISTICS

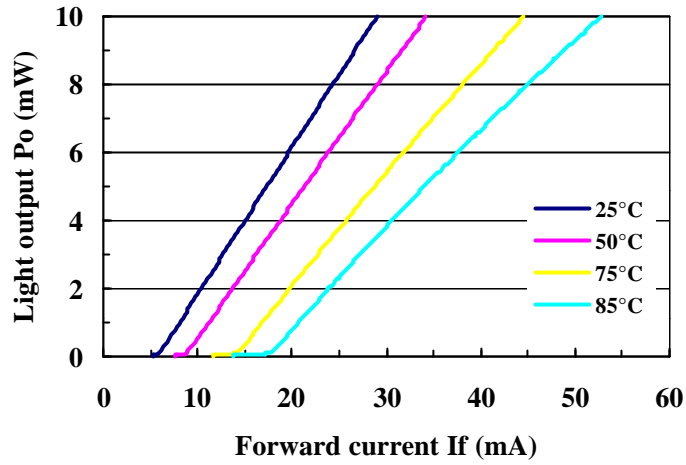


Fig. 1 Light output v.s. forward current

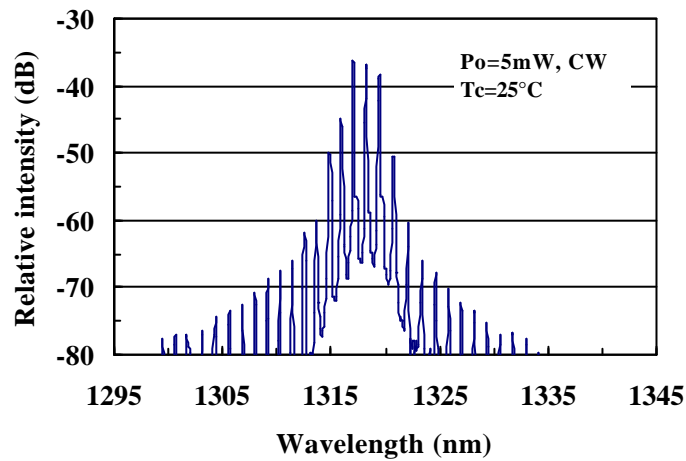


Fig. 2 Spectrum

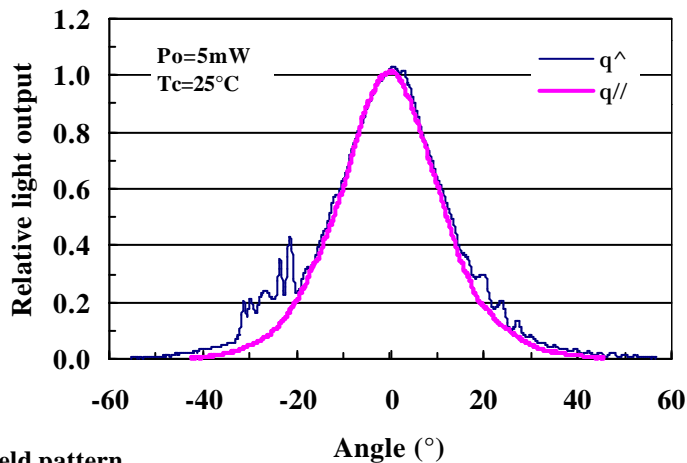


Fig. 3 Far field pattern