

ML9xx45 SERIES

1550,1520nm InGaAsP FP LASER DIODES

Notice: Some parametric limits are subject to change.

TYPE NAME

**ML920J45S , ML920K45S, ML920Y45S
ML925B45F , ML925C45F**

DESCRIPTION

ML9XX45 series are InGaAsP laser diodes which provide a stable, single transverse mode oscillation with emission wavelength of 1550nm and standard continuous light output of 5mW.

ML9XX45 are hermetically sealed devices having the photo diode for optical output monitoring. This is suitable for such applications as FTTH (Fiber to the Home) systems.

FEATURES

- 1550 or 1520nm typical emission wavelength, FP-LDs
- Low threshold current, low operating current
- Wide temperature range operation (Tc=-40 to 85deg.C)
- ϕ 5.6mm TO-CA N package
- Flat window cap : ML920J45S, ML925B45F
- Ball lens cap : ML920K45S, ML925C45F, ML920Y45S

APPLICATION

- ~155Mbps FTTH system

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	6[4]	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	deg.C
Tstg	Storage temperature	-	-40 to +100	deg.C

ELECTRICAL/OPTICAL CHARACTERISTICS(Tc=25°C)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
Ith	Threshold current	CW		3	10	20	mA
Iop	Operation current	CW, Po=5mW[3mW]		10	30	50	mA
Vop	Operating voltage	CW, Po=5mW[3mW]		---	1.1	1.5	V
η	Slope efficiency	CW, Po=5mW[3mW]		0.15[0.1]	0.25[0.2]	0.5	mW/mA
λc	Center wavelength	CW, Po=5mW[3mW]	-01spec	1520	1550	1580	nm
			-02spec	1495	1520	1544	
Δλ	Spectral Width	CW, Po=5mW, [3mW]RMS(-20dB)		---	1.5	3	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 (10%-90%)	Ib=Ith,Po=5mW [3mW],10-90%		---	0.3	0.7	nsec
Im	Monitor Current (PD)	CW, Po=5mW[3mW], VRD=1V,		0.1	0.5	1.0	mA
Id	Dark Current (PD)	VRD=10V		---	---	0.1	μA
Ct	Capacitance (PD)	VRD=10V, f=1MHz		---	10	20	pF
Pf(Note2)	Fiber Coupling characteristics at peak coupling<3>	CW, PL=3mW,SI10/125		0.2	0.5	---	mW
Df(Note2)		CW, PL=3mW SI10/125	ML920K45S ML925C45F	5.0	5.8	6.2	mm
			ML920Y45S	6.0	6.5	7.0	

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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MITSUBISHI LASER DIODES

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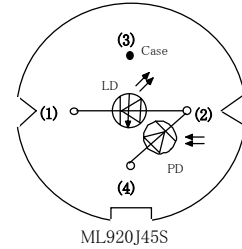
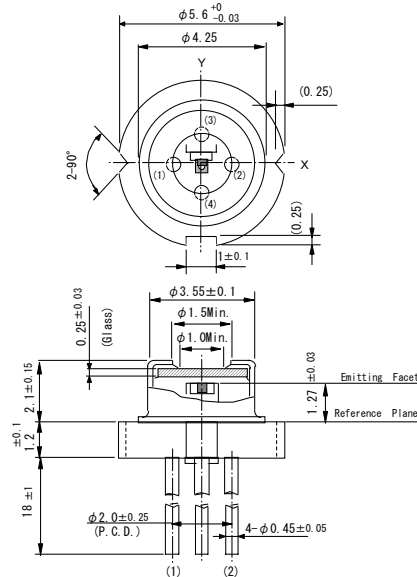
OUTLINE DRAWINGS

ML920J45S

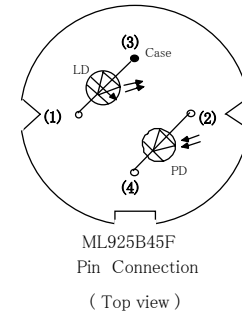
ML925B45F



Dimension : mm



ML920J45S



ML925B45F
Pin Connection

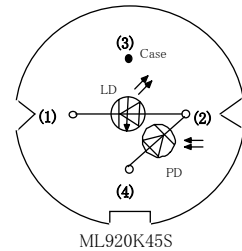
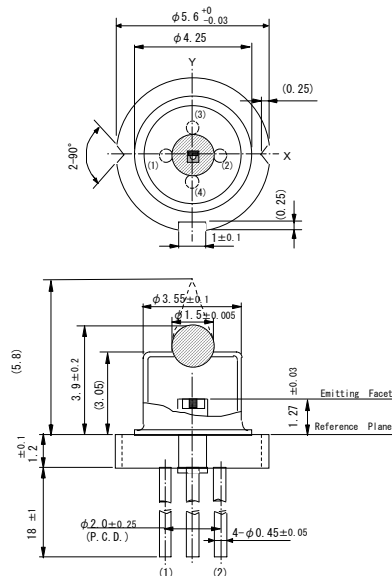
(Top view)

ML920K45S

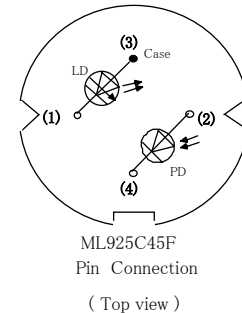
ML925C45F



Dimension : mm



ML920K45S



ML925C45F
Pin Connection

(Top view)

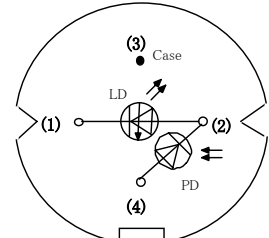
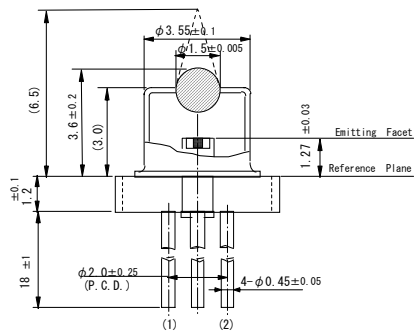


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ML920Y45S

Technical drawing of a circular part with four holes. The outer diameter is $\phi 5.6^{+0}_{-0.03}$ and the inner diameter is $\phi 4.25$. There are four holes labeled (1), (2), (3), and (4) arranged in a square pattern. The distance between the centers of opposite holes is 0.25. The part has a 2-90 degree chamfer. The thickness is 1 ± 0.1 .



ML920Y45S
(Top view)