

**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)
- φ5.6mm 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]	1520 -01spec 1495 -02spec	1550 1520 1544	1580	nm
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)		CW, PL=3mW,SI10/125	0.2	0.5	---	mW
Df(Note2)	Fiber Coupling characteristics at peak coupling<3>	CW, PL=3mW SI10/125	5.0	5.8	6.2	mm
		ML920K45S ML925C45F	6.0	6.5	7.0	
		ML920Y45S				

Note : &lt;1&gt; [ ] applied to the lens cap type.

Note : &lt;2&gt; Pf,Df are applied to the ball lens type.

Note : &lt;3&gt; Df is a distance between reference plane of the base to the fiber.



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ELECTRIC

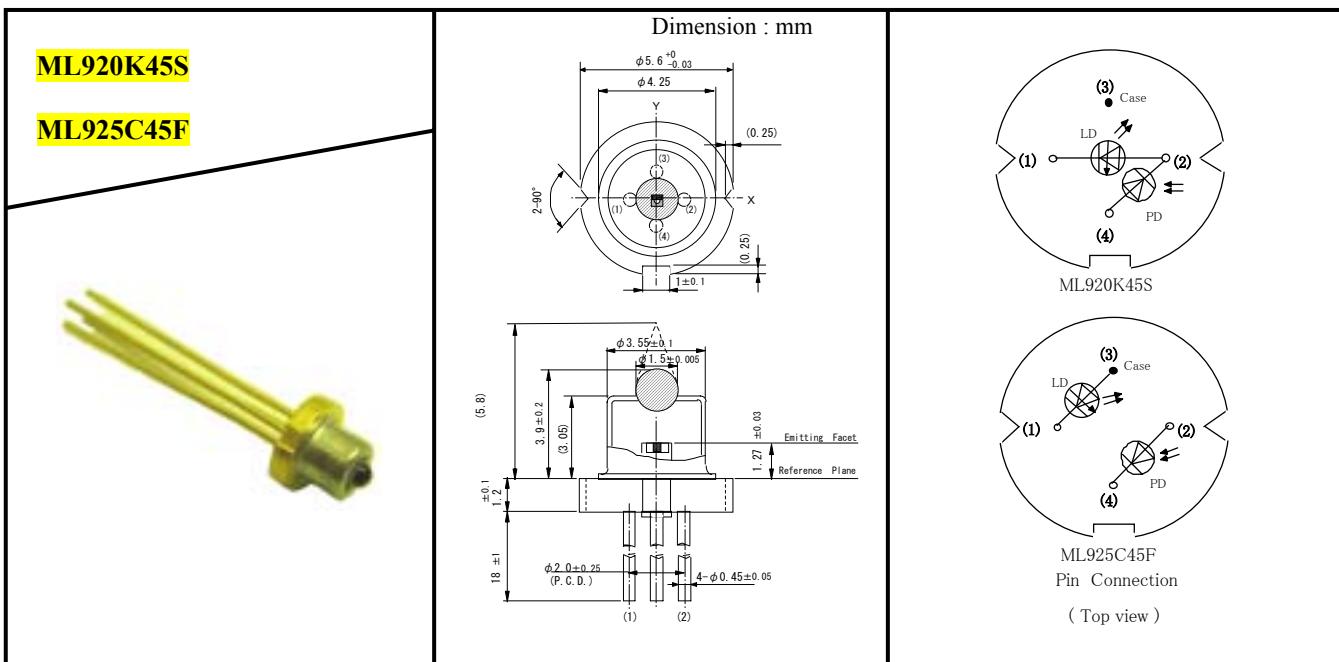
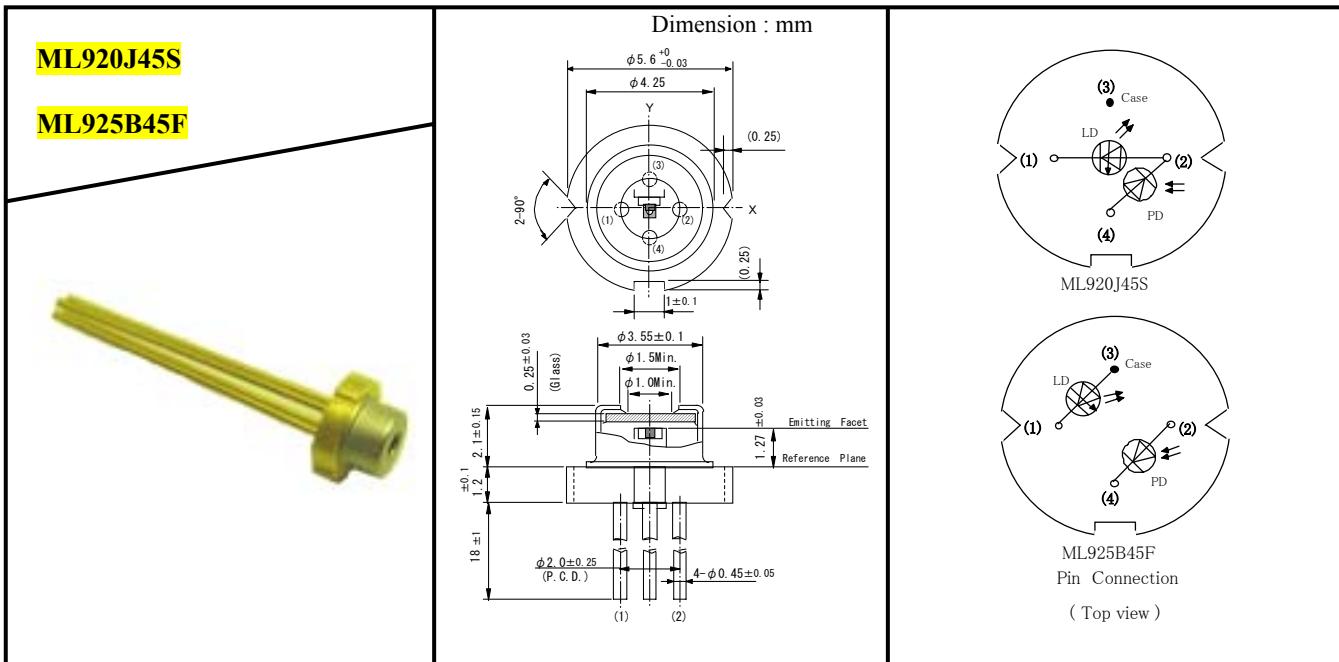
May 2004

## **mitsubishi laser diodes**

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## **OUTLINE DRAWINGS**



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**ELECTRIC**

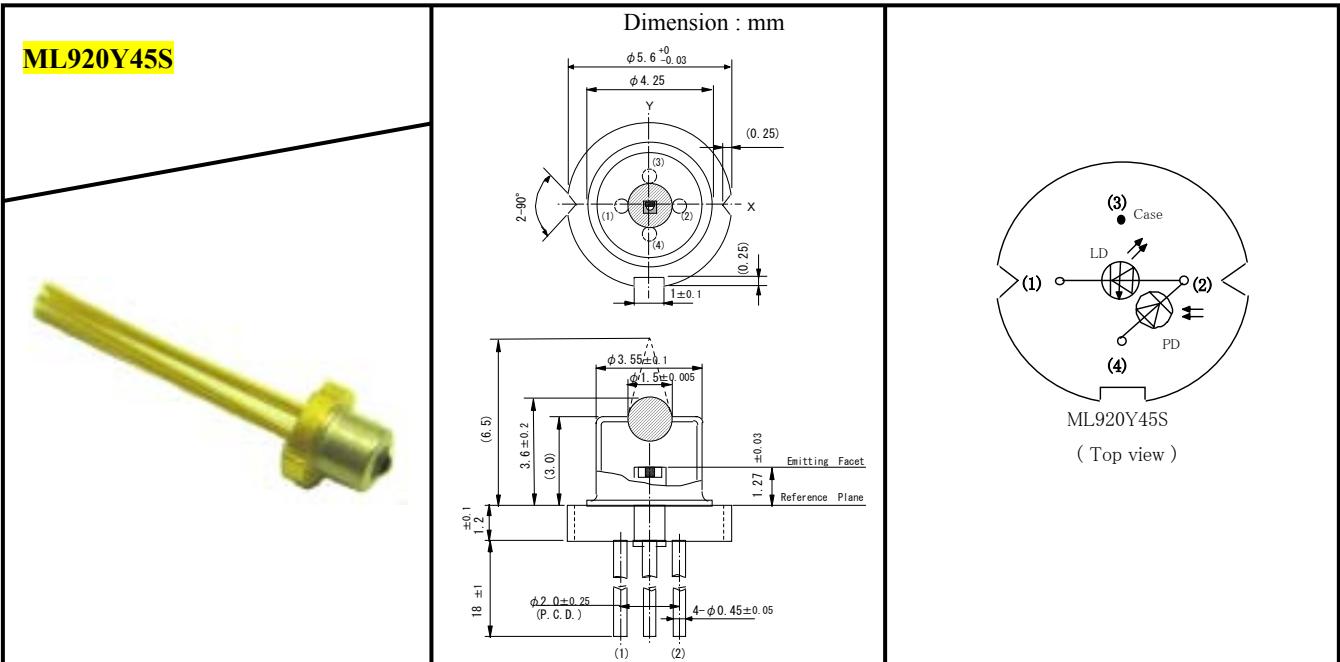
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