

TYPE  
NAME

**ML701B8R**  
**ML776H8F, ML774F8F, ML720B8S**  
**ML776K8F, ML774E8F, ML720D8S**

**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, fabry-perot LDs
  - High-power, wide temp. range operation (Po = 10mW, Tc = -40 ~ +85°C)
  - Have a lens-cap (ML776K8F, ML774E8F, ML720B8S)
  - High reliability, long operation life
  - MQW\* active layer
  - FSBH\*\* structure fabricated by all MOCVD process
- \* : Multiple Quantum Well  
\*\* : Facet Selective-growth Buried Heterostructure

**APPLICATION**

Optical communication system

**ABSOLUTE MAXIMUM RATINGS**

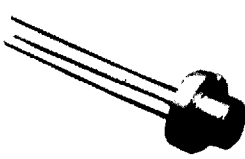
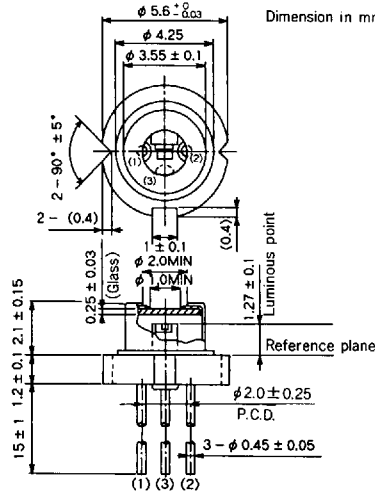
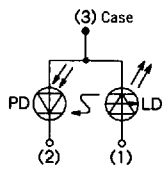

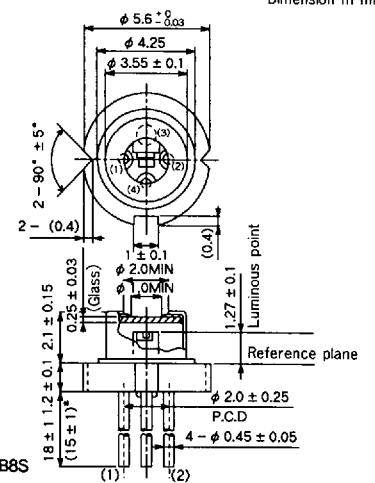
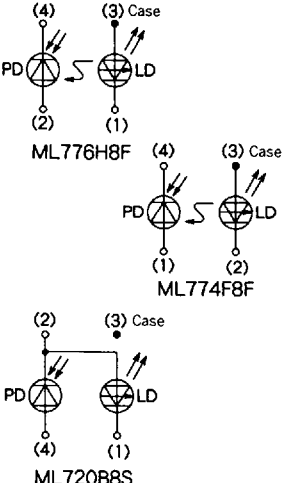
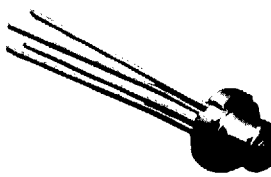
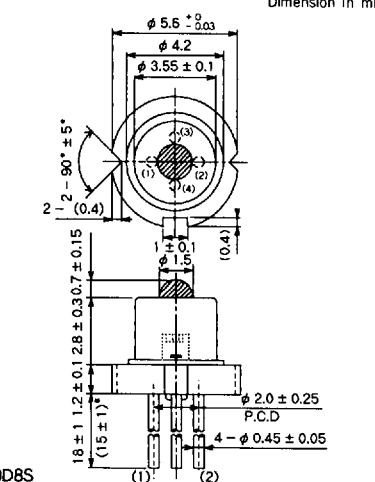
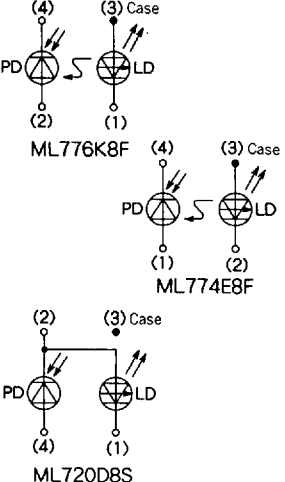
Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	10 [5]	mW
VRL	Reverse voltage (Laser diode)	-	2	V
VRD	Reverse voltage (Photodiode)	-	20	V
IFD	Forward current (Photodiode)	-	2	mA
Tc	Case temperature	-	-40~+85	°C
Tstg	Storage temperature	-	-40~+100	°C

**ELECTRICAL/OPTICAL CHARACTERISTICS** (Tc = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
Ith	Threshold current	CW	-	5	20	mA
IoP	Operating current	CW, Po = 5mW	-	20	45	mA
VOP	Operating voltage	CW, Po = 5mW	-	1.1	1.5	V
η	Slope efficiency	CW, Po = 5mW	0.2 [0.1]	0.5 [0.25]	-	mW/mA
λc	Center wavelength	CW, Po = 5mW	1290	1310	1330	nm
Δλ	Spectral width (RMS)	CW, Po = 5mW	-	1.0	3.0	nm
θ//	Beam divergence angle (parallel)	CW, Po = 5mW	-	25 [10]	-	deg.
θ⊥	Beam divergence angle (perpendicular)	CW, Po = 5mW	-	30 [12]	-	deg.
tr, tf	Rise and fall times	Ib = Ith, Po = 5mW, 10%~90%	-	0.3	0.7	ns
Im	Monitoring output current (Photodiode)	CW, Po = 5mW, VRD = 1V, RL = 10 Ω	0.1	0.5	-	mA
Id	Dark current (Photodiode)	VRD = 10V	-	0.01	0.1	μA
Ct	Capacitance (Photodiode)	VRD = 10V, f = 1MHz	-	8	20	pF

Note 1: [ ] Applied to ML776K8F, ML774E8F, ML720D8S at PL (output power from lens) = 3mW

OUTLINE DRAWINGS

<p><b>ML701B8R</b></p> 	<p>Dimension in mm</p> 	
<p><b>ML776H8F</b> <b>ML774F8F</b> <b>ML720B8S</b></p> 	<p>Dimension in mm</p>  <p>* ML720B8S</p>	
<p><b>ML776K8F</b> <b>ML774E8F</b> <b>ML720D8S</b></p> 	<p>Dimension in mm</p>  <p>* ML720D8S</p>	

TYPICAL CHARACTERISTICS

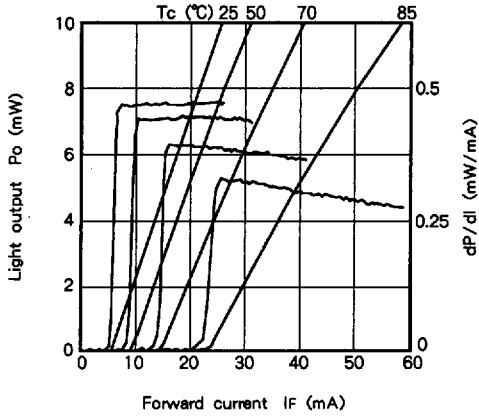


Fig. 1 Light output vs. forward current

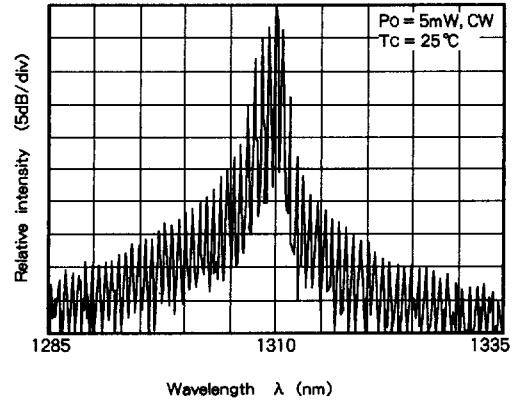


Fig. 2 Spectrum

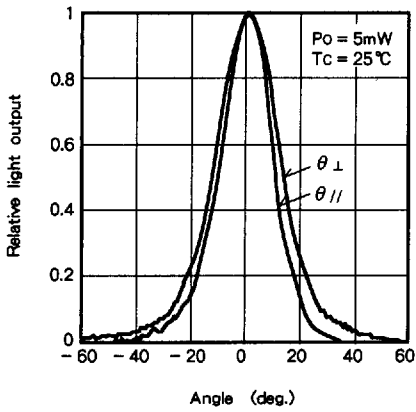


Fig. 3 Far-field pattern