

MITSUBISHI LASER DIODES
ML1XX2 SERIES
AlGaInP LASER DIODES

**TYPE
NAME**

ML1012R,ML1412R,ML120G2

DESCRIPTION

ML1XX2 is a high power AlGaInP semiconductor laser which provides a stable, single transverse mode oscillation with emission wavelength of 685nm (typical) and standard continuous light output of 30mW.

FEATURES

- High power 30mW(CW)
- Short wavelength (685nm typ.)
- High reliability

APPLICATION

Optical disc drive (High Density)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	35	mW
		Pulse (Note 2)	50	
VRL	Reverse voltage (laser diode)	—	2	V
VRD	Reverse voltage (Photodiode)	—	30	V
IFD	Forward current (Photodiode)	—	10	mA
Tc	Case temperature	—	−10~+60	°C
Tstg	Storage temperature	—	−10~+100	°C

Note 1: The maximum rating means the limitation over which the laser should not be operated even instant time, and this does not mean the guarantee of its lifetime.

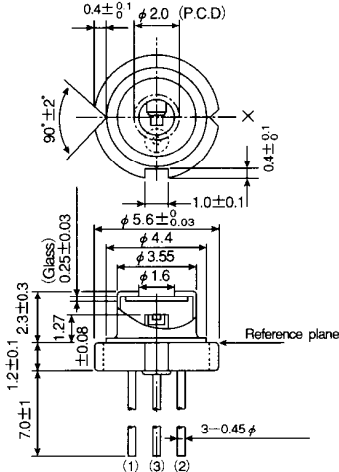
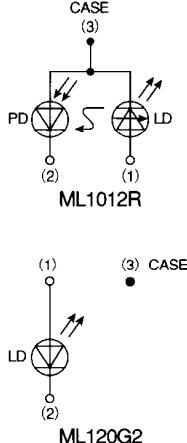
Note 2: Duty cycle less than 50%, pulse width less than 1 μ s.

ELECTRICAL/OPTICAL CHARACTERISTICS

Symbol	Parameter	Test condition	Limits			Unit
			Min.	Typ.	Max.	
Ith	Threshold current	CW	—	35	60	mA
IOP	Operation current	CW, Po = 30mW	—	80	120	mA
VOP	Operating voltage	CW, Po = 30mW	2.0	2.4	3.0	V
η	Slope efficiency	CW, Po = 30mW	—	0.75	—	mW/mA
λ_P	Peak wavelength	CW, Po = 30mW	670	685	700	nm
$\theta_{//}$	Beam divergence angle (parallel)	CW, Po = 30mW	7	9.5	12	deg.
$\theta_{\perp}$	Beam divergence angle (perpendicular)	CW, Po = 30mW	16	20	25	deg.
Im	Monitoring output current (photodiode)	CW, Po = 30mW, VRD = 1V, RL = 10 Ω *3	0.05	0.2	1.5	mA
ID	Dark current (Photodiode)	VRD = 10V	—	—	0.5	μ A
Ct	Capacitance (Photodiode)	f = 1MHz, VRD = 5V	—	7	—	pF

Note3: RL=the load resistance of photodiode (ML1012R,ML1412R)

OUTLINE DRAWINGS

ML1012R ML120G2 	Dimension : mm 	 ML1012R ML120G2
ML1412R 	Dimension : mm 