TYPE NAME

ML60115R

DISCRIPTION

ML6XX15 is a high power AlGaAs semiconductor laser diodes which provides a stable, single transverse mode oscillation with emission wavelength of 785nm and standard light output of 30mW.

ML6XX15 is produced by the MOCVD crystal growth method which is excellent in mass production and characteristics uniformity. This is a high - performance, highly reliable, and long life semiconductor laser.

FEATURES

- ●Output 30mW (CW) 40mW (pulse)
- ●Short astigmatic distance
- ●Built - in monitor photodiode
- ●MQW* active layer

*Multiple Quantum Well

APPLICATION

Optical disc memory (rewritable, write once)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Symbol	Parameter	Conditions	Ratings	Unit
P_O	Light output power	CW	35	mW
		Pulse (Note2)	45	
V_{RL}	Reverse voltage (Laser diode)	—	2	V
V_{RD}	Reverse voltage (photodiode)	—	30	V
I_{FD}	Forward current (photodiode)	—	10	mA
T_C	Case temperature	—	−40～+60	℃
T_{stg}	Storage temperature	—	−55～+100	℃

Note 1 : Duty less than 50%, pulse width less than 1 μs

2 : 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. As for the reliavility, please refer to the reliability report from Mitsubishi Semiconductor Quality Assurrance Department.

ELECTRICAL/OPTICAL CHARACTERISTICS (T_C = 25℃)

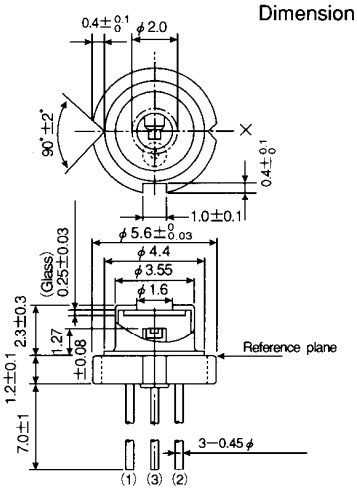
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{th}	Threshold current	CW	—	35	55	mA
I_{OP}	Operating current	CW,P_O = 30mW	—	90	110	mA
V_{OP}	Operating voltage	CW,P_O = 30mW	—	2.0	2.5	V
η	Slope efficiency	CW,P_O = 30mW	0.40	0.55	0.75	mW/mA
λ_P	Peak Wavelength	CW,P_O = 30mW	770	785	800	nm
$\theta_{//}$	Beam divergence angle (parallel)	CW,P_O = 30mW	8	10	13	deg.
$\theta_{\perp}$	Beam divergence angle (perpendicular)	CW,P_O = 30mW	22	25	28	deg.
I_m	Monitoring output current (photodiode)	CW,P_O = 30mW,V_{RD} = 1V,R_L = 10Ω (Note 3)	—	0.4	—	mA
I_D	Dark current (photodiode)	V_{RD} = 10V	—	—	0.5	μA
C_t	Capacitance (photodiode)	V_{RD} = 5V,f = 1MHz	—	7	—	pF

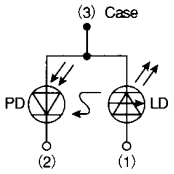
Note 3 : R_L = the load resistance of photodiode

OUTLINE DRAWINGS

ML60115R

Dimension : mm





TYPICAL CHARACTERISTICS

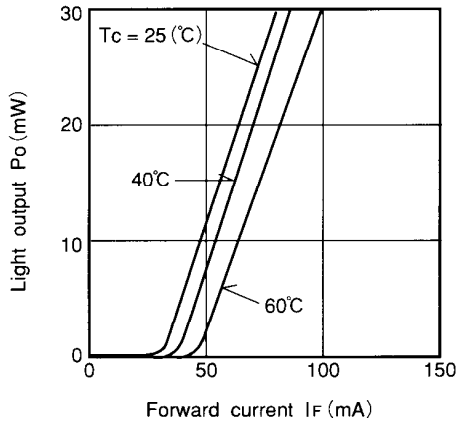


Fig. 1 Light output vs. forward current

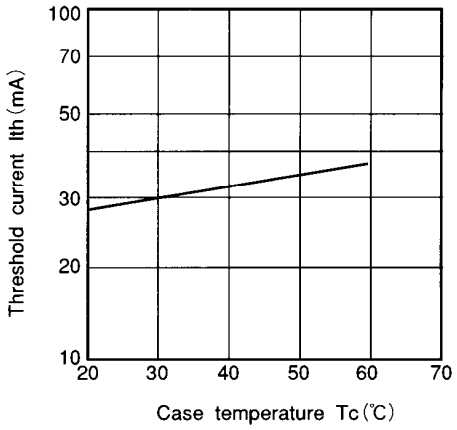


Fig. 2 Temperature dependence of threshold current

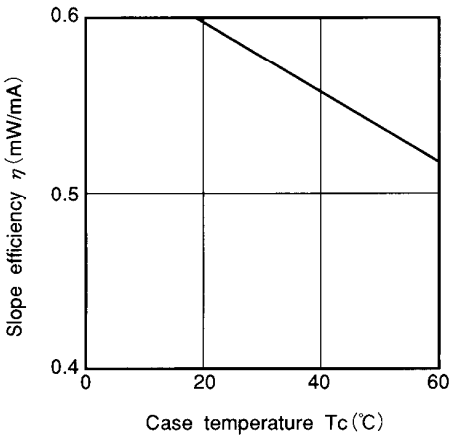


Fig. 3 Case temperature dependence of slope efficiency

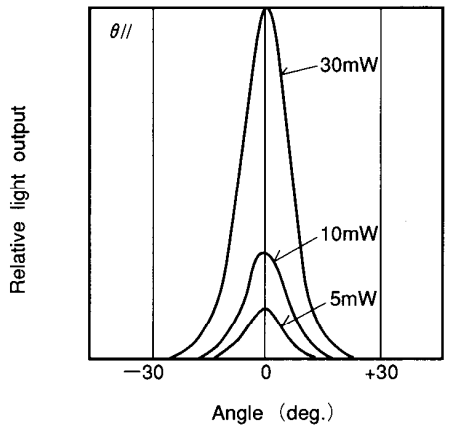


Fig. 4 Far field pattern $\theta_{//}$

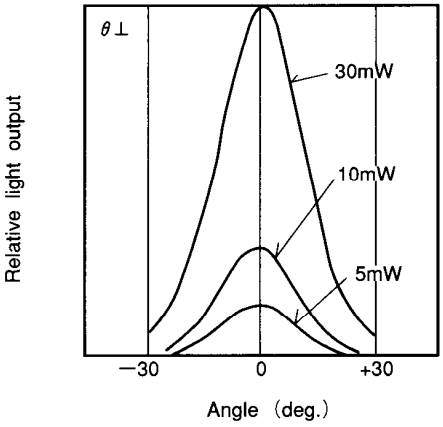


Fig. 5 Far field pattern $\theta_{\perp}$