

MITSUBISHI LASER DIODES
ML6XX15 SERIES

AlGaAs LASER DIODES

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
Po	Light output power	CW	35	mW
		Pulse (Note2)	45	
VRL	Reverse voltage (Laser diode)	—	2	V
VRD	Reverse voltage (photodiode)	—	30	V
IFD	Forward current (photodiode)	—	10	mA
Tc	Case temperature	—	-40~+60	°C
Tstg	Storage temperature	—	-55~+100	°C

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 Assurance Department.

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc = 25°C)

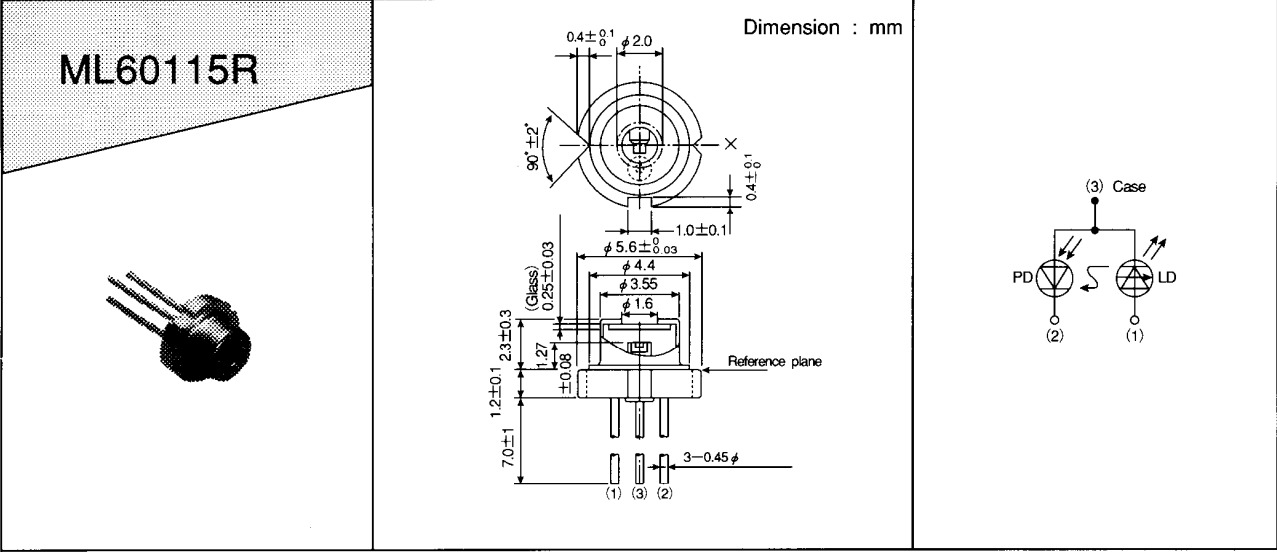
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
Ith	Threshold current	CW	—	35	55	mA
IOP	Operating current	CW, Po = 30mW	—	90	110	mA
VOP	Operating voltage	CW, Po = 30mW	—	2.0	2.5	V
η	Slope efficiency	CW, Po = 30mW	0.40	0.55	0.75	mW/mA
λP	Peak Wavelength	CW, Po = 30mW	770	785	800	nm
θ//	Beam divergence angle (parallel)	CW, Po = 30mW	8	10	13	deg.
θ⊥	Beam divergence angle (perpendicular)	CW, Po = 30mW	22	25	28	deg.
Im	Monitoring output current (photodiode)	CW, Po = 30mW, VRD = 1V, RL = 10 Ω (Note 3)	—	0.4	—	mA
ID	Dark current (photodiode)	VRD = 10V	—	—	0.5	μA
Ct	Capacitance (photodiode)	VRD = 5V, f = 1MHz	—	7	—	pF

Note 3 : RL = the load resistance of photodiode

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AIGaAs LASER DIODES

OUTLINE DRAWINGS



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TYPICAL CHARACTERISTICS

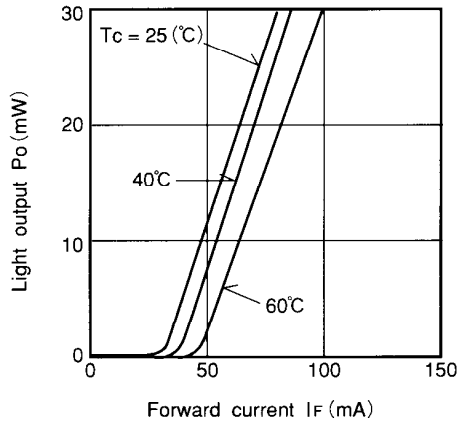


Fig. 1 Light output vs. forward current

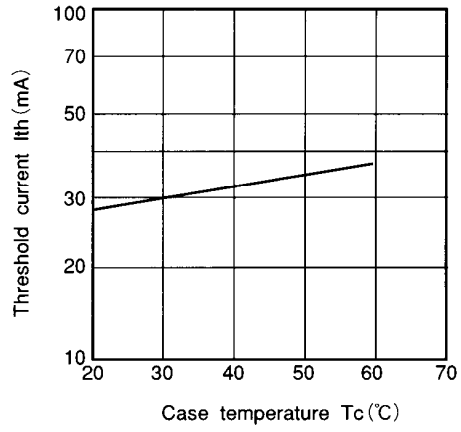


Fig. 2 Temperature dependence of threshold current

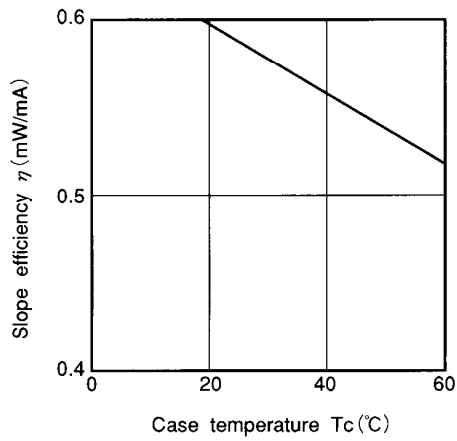


Fig. 3 Case temperature dependence of slope efficiency

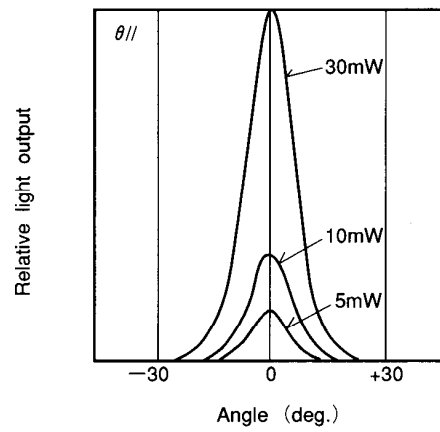


Fig. 4 Far field pattern $\theta_{//}$

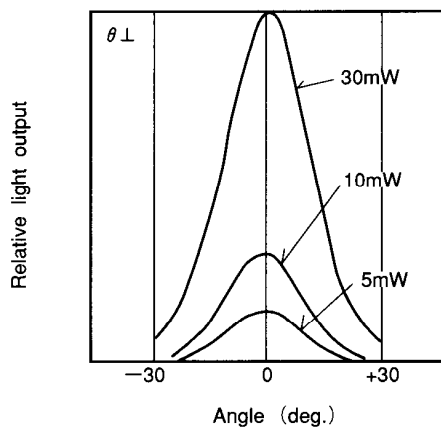


Fig. 5 Far field pattern θ_{\perp}