

Under Development
Preliminary

MITSUBISHI LASER DIODES
ML1XX14 SERIES
FOR OPTICAL INFORMATION SYSTEMS

TYPE
NAME

ML101J14, ML120G14

This Model is under development. Therefore, please note that this data sheet may be changed without any notice.

DESCRIPTION

ML1XX14 is a high power AlGaInP semiconductor laser which provides a stable, single transverse mode oscillation with emission wavelength of 660 nm and standard PULSE light output of 70mW.

ML1XX14 has a window-mirror-facet which improves the maximum output power. That leads to highly reliable and high-power operation.

FEATURES

- High Output Power: 50mW (CW) , 70mW (Pulse)
- Visible Light: 660nm (typ.)

APPLICATION

High-Density Optical Disc Drives
Rewritable DVD(Digital Versatile Disc) Drives

ABSOLUTE MAXIMUM RATINGS Note 1)

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	60	mW
		Pulse(Note 2)	70	
VRL	Reverse voltage	-	2	V
Tc	Case temperature	-	-10 ~ +60	°C
Tstg	Storage temperature	-	-40 ~ +100	°C

Note1: 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 reliability, please refer to the reliability report from Mitsubishi Semiconductor Quality Assurance Section.

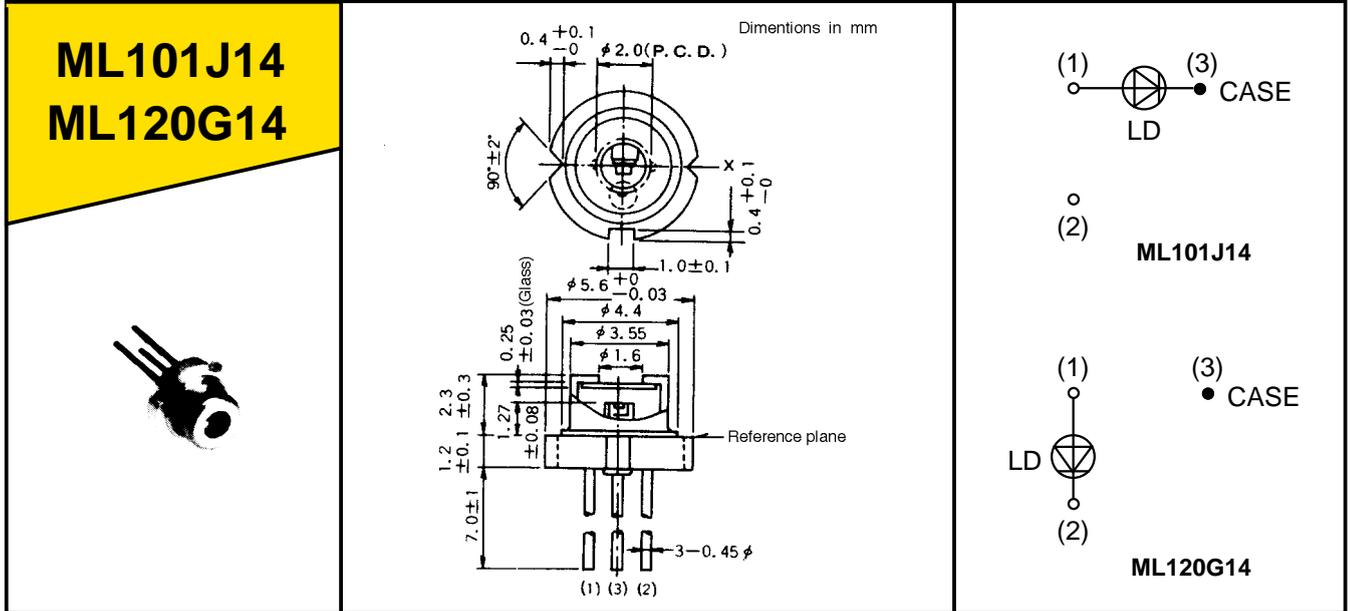
Note2: TARGET SPEC /Condition Duty less than 50%, pulse width less than 0.1μs

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max	Unit
I _{th}	Threshold current	CW	-	57	-	mA
I _{op}	Operating current	CW, Po=50mW	-	132	-	mA
V _{op}	Operating voltage	CW, Po=50mW	-	2.5	3.0	V
η	Slope efficiency	CW, Po=50mW	-	0.67	-	mW/mA
λ _p	Peak wavelength	CW, Po=50mW	655	660	666	nm
θ _{//}	Beam divergence angle (parallel)	CW, Po=50mW	-	8.5	-	°
θ _⊥	Beam divergence angle (perpendicular)	CW, Po=50mW	-	22	-	°

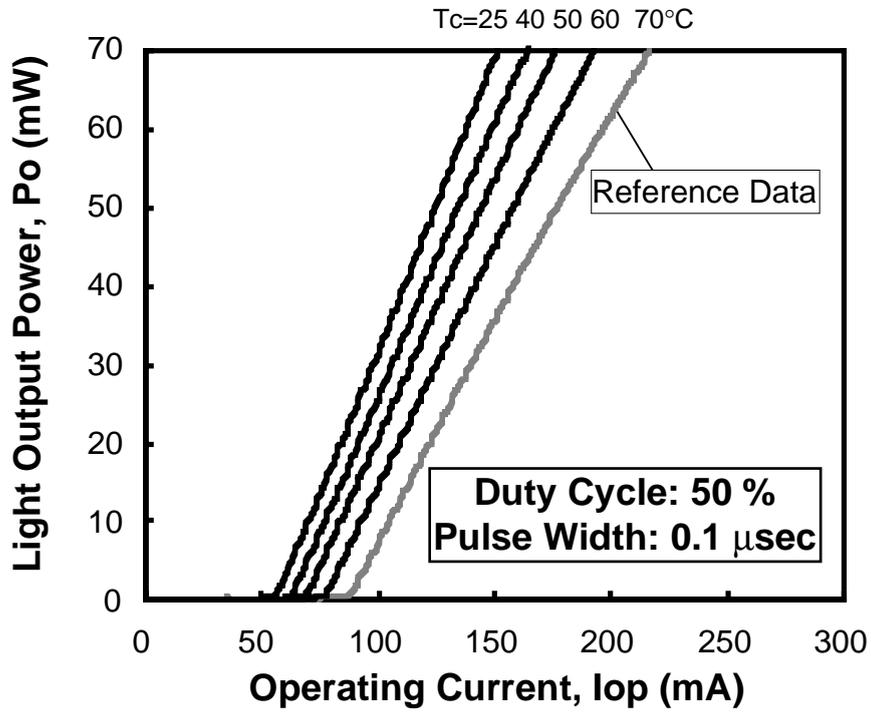
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OUTLINE DRAWINGS

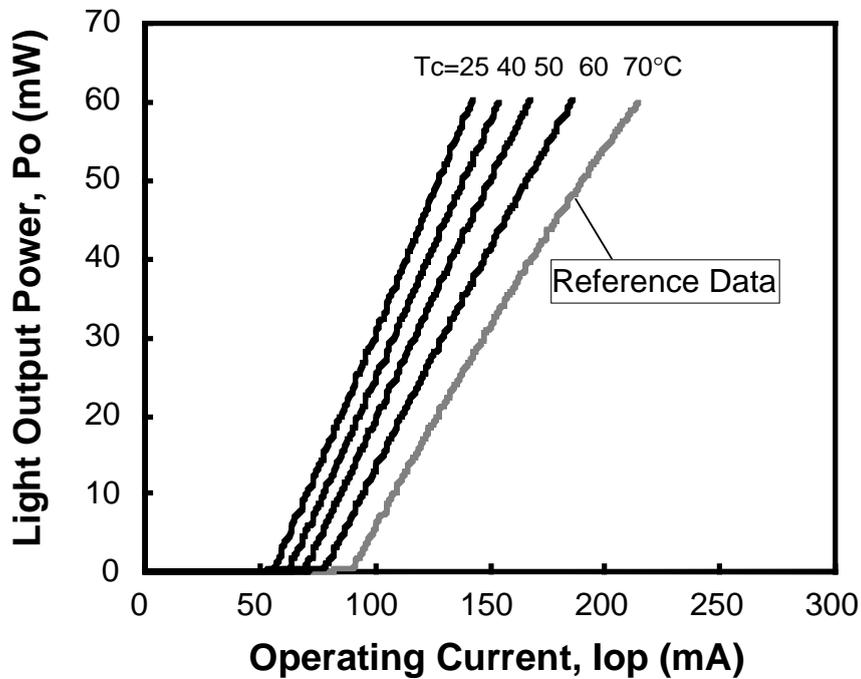


There is no model with a monitor photo diode in ML1XX14 series.

Typical Characteristics



Light Output Power vs. Current (Pulse)

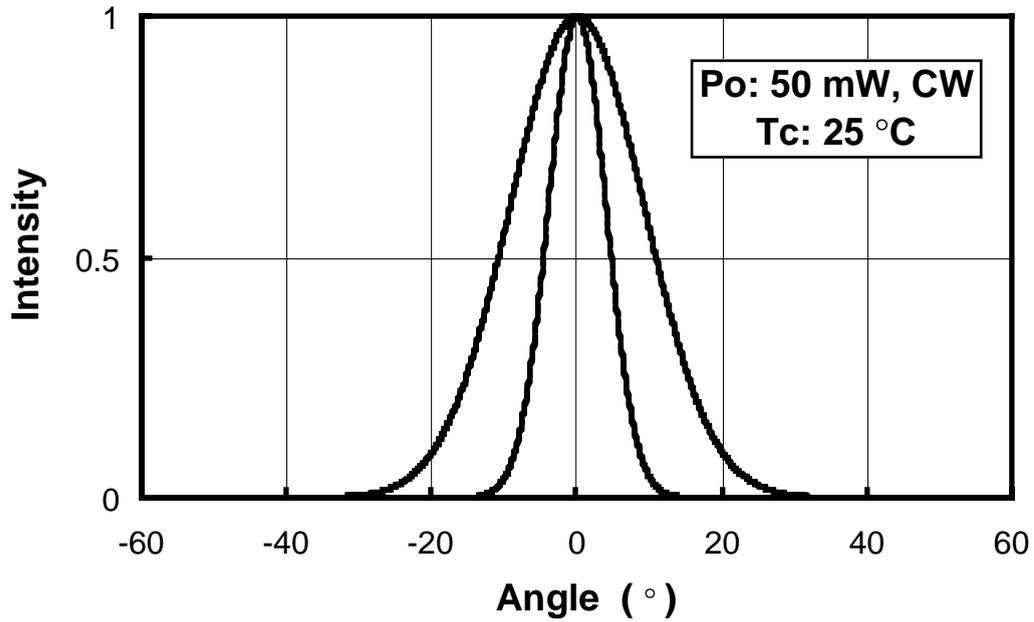


Light Output Power vs. Current (CW)

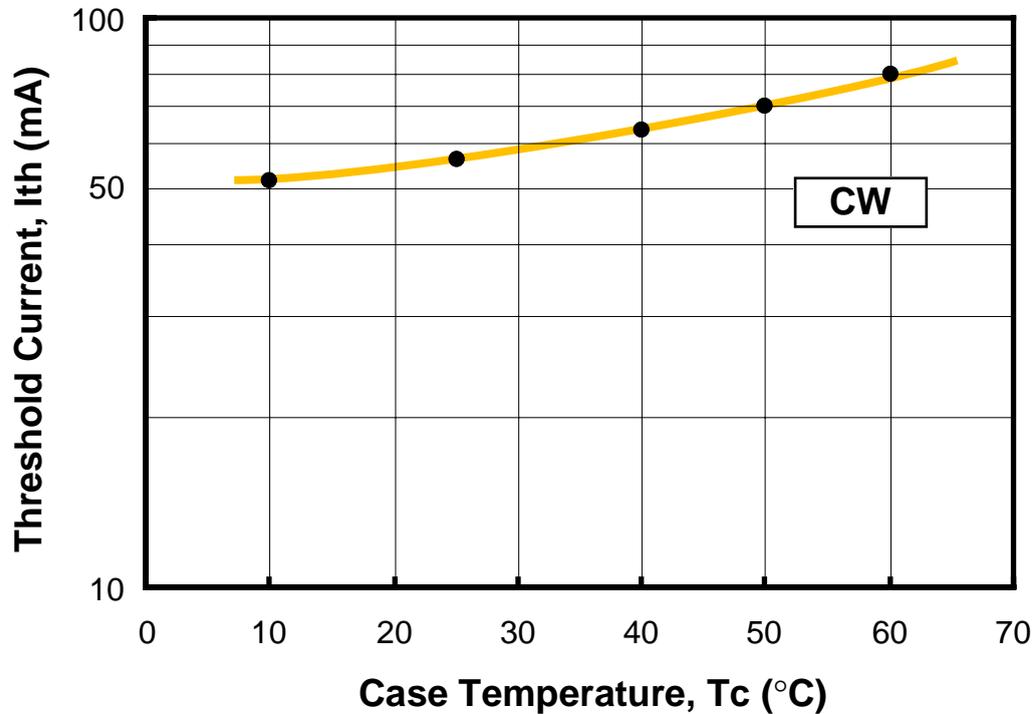
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Typical Characteristics

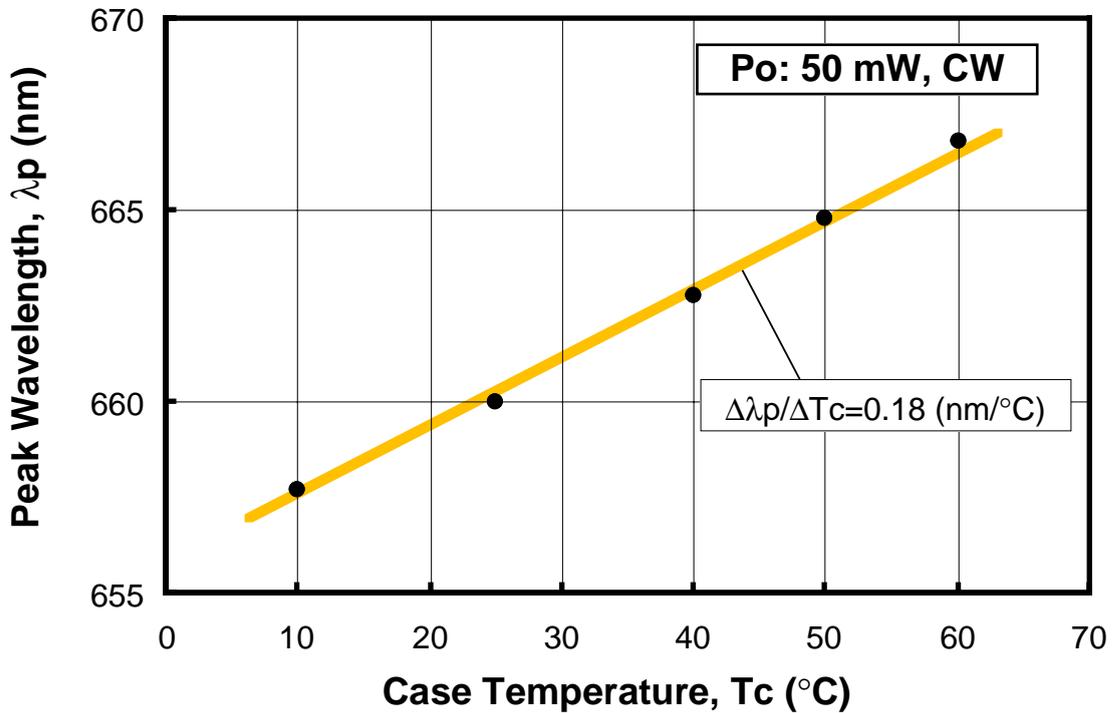


Far Field Patterns

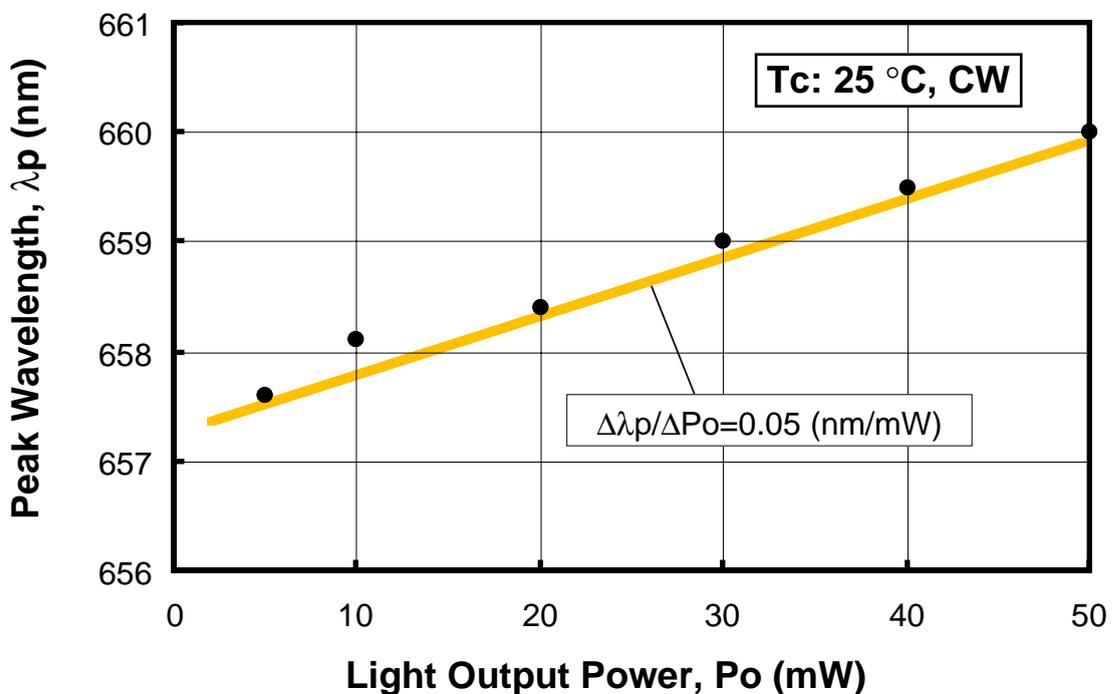


Threshold Current vs Temperature

Typical Characteristics



Temperature dependence of Peak Wavelength



Light Output Power dependence of Peak Wavelength