ML1XX20 SERIES

FOR OPTICAL INFORMATION SYSTEMS

TYPE NAME

ML101J20, ML120G20

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

DESCRIPTION

ML1XX20 is a high-power, high-efficient AlGaInP semiconductor laser which provides a stable, single transverse mode oscillation with emission wavelength of 658nm and standard pulse light output of 140mW.

ML1XX20 has a real-index-waveguide which improves the slope efficiency (reduction of the operating current) and the astigmatic distance.

Also, ML1XX20 has a window-mirror-facet which improves the maximum output power. That leads to highly reliable and high-power operation.

FEATURES

- High Output Power: 140mW (Pulse)
- High Efficiency: 1.0W/A (typ.)
- Visible Light: 658nm (typ.)
- Low Astigmatic Distance: 1μm (typ.)

APPLICATION

Portable High-Density Optical Disc Drives
Re-Writable DVD Drives

ABSOLUTE MAXIMUM RATINGS (Note 1)

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	**60**	mW
		Pulse(Note 2)	**140**	
VRL	Reverse voltage	-	**2**	V
Tc	Case temperature	-	**-10 ~ +75**	°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. This does not mean the guarantee of its lifetime. As for the reliability, please refer to the reliability report issued by Quality Assurance Section, HF & Optical Semiconductor Division, Mitsubishi Electric Corporation.

Note2: TARGET SPEC /Condition Duty Cycle: less than 50%, pulse width: less than 100ns

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25° C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max	Unit
Ith	Threshold current	CW	-	**55**	-	mA
Iop	Operating current	CW, Po=50mW	-	**105**	-	mA
Vop	Operating voltage	CW, Po=50mW	-	**2.4**	**3.0**	V
η	Slope efficiency	CW, Po=50mW	-	**1.0**	-	mW/mA
λp	Peak wavelength	CW, Po=50mW	**654**	**658**	**662**	nm
θ//	Beam divergence angle (parallel)	CW, Po=50mW	**7**	**9**	**12**	°
θ⊥	Beam divergence angle (perpendicular)	CW, Po=50mW	**15**	**18**	**21**	°

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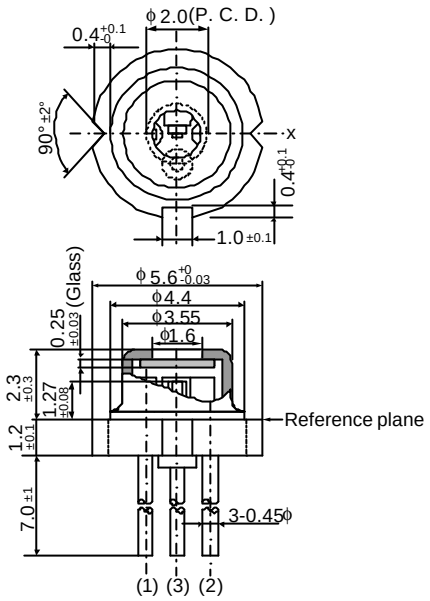
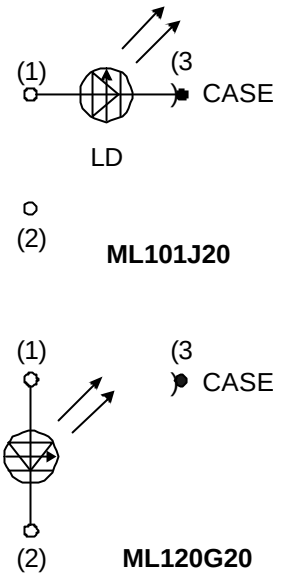
OUTLINE DRAWINGS

ML101J20
ML120G20

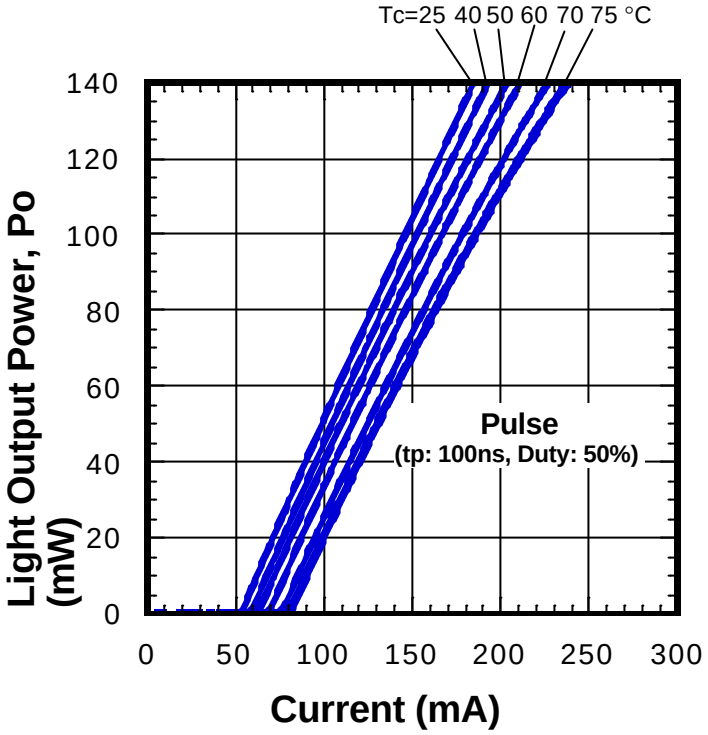
Dimentions in mm



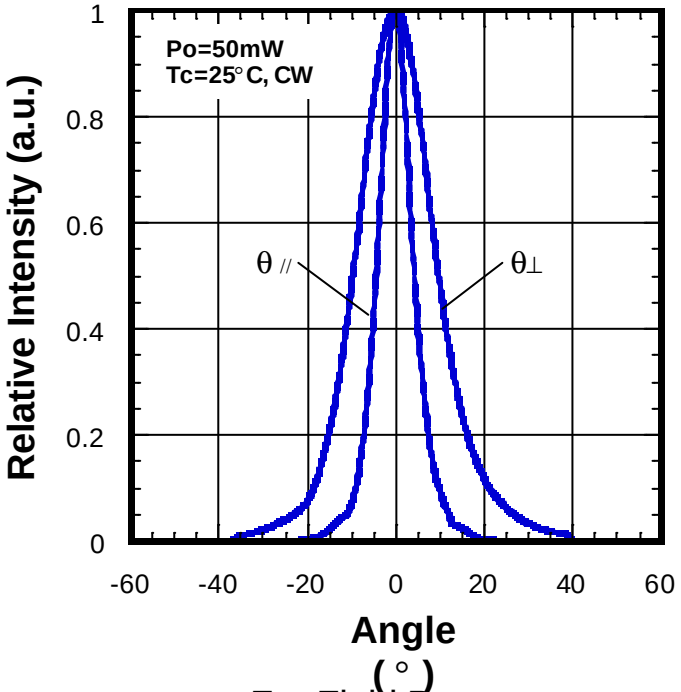


There is no model with a monitor photo diode in ML1XX20 series.

TENTATIVE CHARACTERISTICS (Reference Data)



Light Output Power vs. Current (Pulse)



Far Field Patterns