

**Under Development**  
**Preliminary**

MITSUBISHI LASER DIODES  
**ML1XX29 SERIES**  
FOR OPTICAL INFORMATION SYSTEMS

**TYPE  
NAME**

**ML101U29**

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

## DESCRIPTION

ML1XX29 is a high-power, high-efficient AlGaInP semiconductor laser which provides a stable, single transverse mode oscillation with emission wavelength of 660nm and standard pulse light output of 400mW.

ML1XX29 has a real-index-waveguide which improves the slope efficiency (reduction of the operating current) and the astigmatic distance.

Also, ML1XX29 has a window-mirror-facet which improves the maximum output power. That leads to highly reliable and high-power operation at 75 °C.

## FEATURES

- High Output Power: 400mW (Pulse)
- High Efficiency: 0.97W/A (typ.)
- Visible Light: 660nm (typ.)
- Low Aspect Ratio ( $\theta_{\perp} / \theta_{//}$ ): 1.5 (typ.)
- Low Astigmatic Distance:  $\leq 1\mu\text{m}$  (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	<b>150</b>	mW
		Pulse(Note 2)	<b>400</b>	
VRL	Reverse voltage	-	<b>2</b>	V
Tc	Case temperature	-	<b>-10 ~ +75</b>	°C
Tstg	Storage temperature	-	<b>-40 ~ +100</b>	°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 35%, pulse width: less than 30ns

## ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max	Unit
Ith	Threshold current	CW	-	<b>85</b>	-	mA
Iop	Operating current	CW, Po=120mW	-	<b>205</b>	-	mA
Vop	Operating voltage	CW, Po=120mW	-	<b>2.35</b>	<b>3.0</b>	V
$\eta$	Slope efficiency	CW, Po=120mW	-	<b>0.97</b>	-	mW/mA
$\lambda_p$	Peak wavelength	CW, Po=120mW	<b>654</b>	<b>660</b>	<b>664</b>	nm
$\theta_{//}$	Beam divergence angle (parallel)	CW, Po=120mW	<b>7</b>	<b>10.5</b>	<b>12</b>	°
$\theta_{\perp}$	Beam divergence angle (perpendicular)	CW, Po=120mW	<b>14</b>	<b>16</b>	<b>20</b>	°

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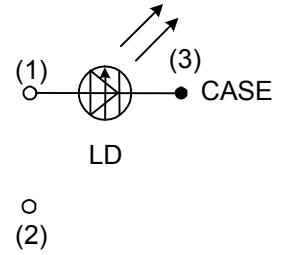
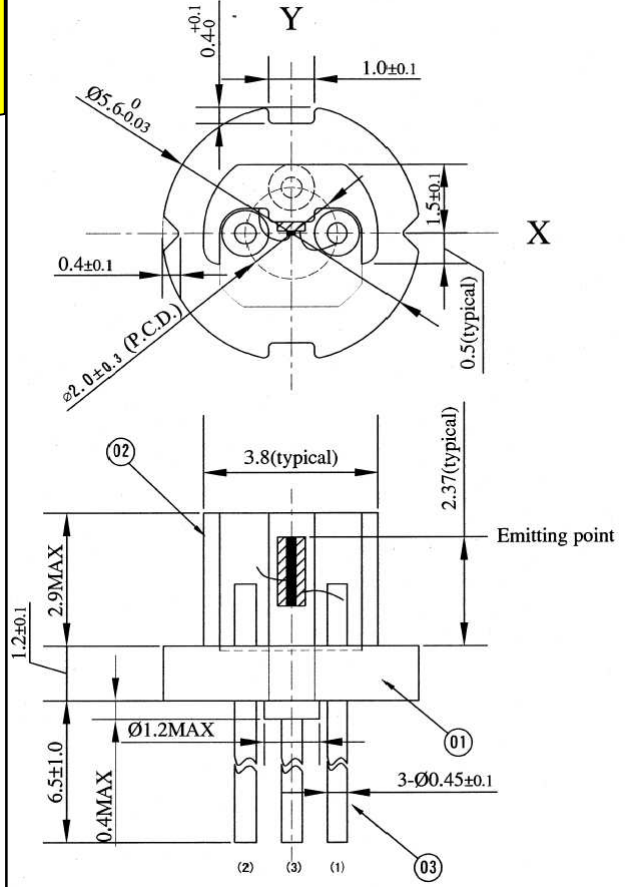
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OUTLINE DRAWINGS

**ML101U29**



Dimensions in mm



There is no model with a monitor photo diode in ML1XX29 series.

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