Under Development
Preliminary

MITSUBISHI LASER DIODES

# ML1XX27 SERIES

FOR OPTICAL INFORMATION SYSTEMS

TYPE NAME

# ML101J27

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

## DESCRIPTION

ML1XX27 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 350mW.

ML1XX27 has a real-index-waveguide which improves the slope efficiency (reduction of the operating current) and the astigmatic distance.

Also, ML1XX27 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: 350mW (Pulse)
- High Efficiency: 0.95W/A (typ.)
- Visible Light: 659nm (typ.)
- Low Aspect Ratio ($\theta\perp$ / $\theta//$): 1.7 (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 | **130** | mW |
| | | Pulse(Note 2) | **350** | |
| 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 35%, pulse width: less than 30ns

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

| Symbol | Parameter | Test conditions | Min. | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Ith | Threshold current | CW | **-** | **80** | **-** | mA |
| Iop | Operating current | CW, Po=120mW | **-** | **200** | **-** | mA |
| Vop | Operating voltage | CW, Po=120mW | **-** | **2.5** | **3.0** | V |
| η | Slope efficiency | CW, Po=120mW | **-** | **0.95** | **-** | mW/mA |
| λp | Peak wavelength | CW, Po=120mW | **654** | **659** | **664** | nm |
| $\theta//$ | Beam divergence angle (parallel) | CW, Po=120mW | **7** | **10** | **12** | ° |
| $\theta\perp$ | Beam divergence angle (perpendicular) | CW, Po=120mW | **14** | **17** | **20** | ° |

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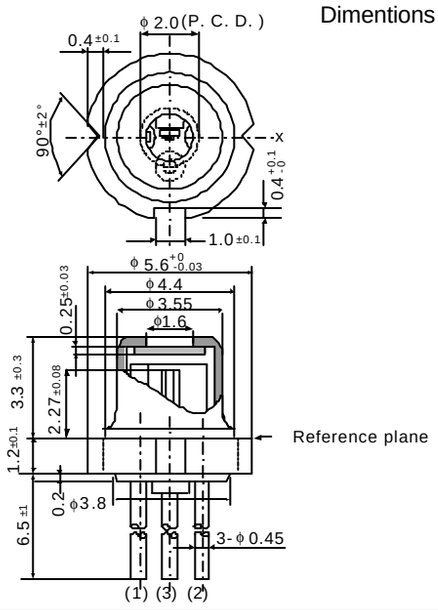
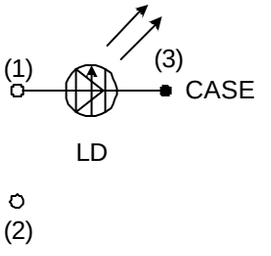
## OUTLINE DRAWINGS

### ML101J27

Dimentions in mm




There is no model with a monitor photo diode in ML1XX27 series.

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