

**Index-Guided High Power AlGaAs Laser Diode**

**Description**

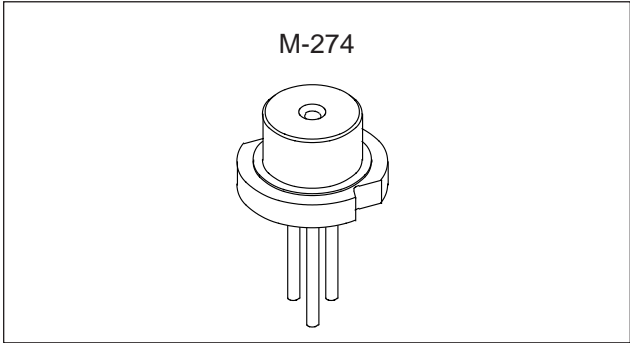
The SLD231VL is a high-power, index-guided AlGaAs laser diode.

**Features**

- Low current consumption
- Small astigmatism
- Small package ( $\phi 5.6\text{mm}$ )

**Applications**

Pickup for optical discs



**Structure**

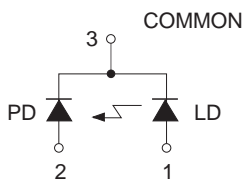
- AlGaAs quantum well structured laser diode
- PIN photodiode for optical power output monitor

**Recommended Operating Optical Power Output**      35mW

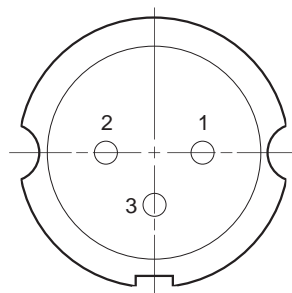
**Absolute Maximum Ratings** ( $T_c = 25^\circ\text{C}$ )

• Optical power output	$P_o$		40	mW
• Reverse voltage	$V_R$	LD	2	V
		PD	15	V
• Operating temperature	$T_{opr}$		-10 to +60	$^\circ\text{C}$
• Storage temperature	$T_{stg}$		-40 to +85	$^\circ\text{C}$

**Connection Diagram**



**Pin Configuration**



- 1. LD anode
- 2. PD anode
- 3. COMMON

Bottom View

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**Optical and Electrical Characteristics (Tc = 25°C)**

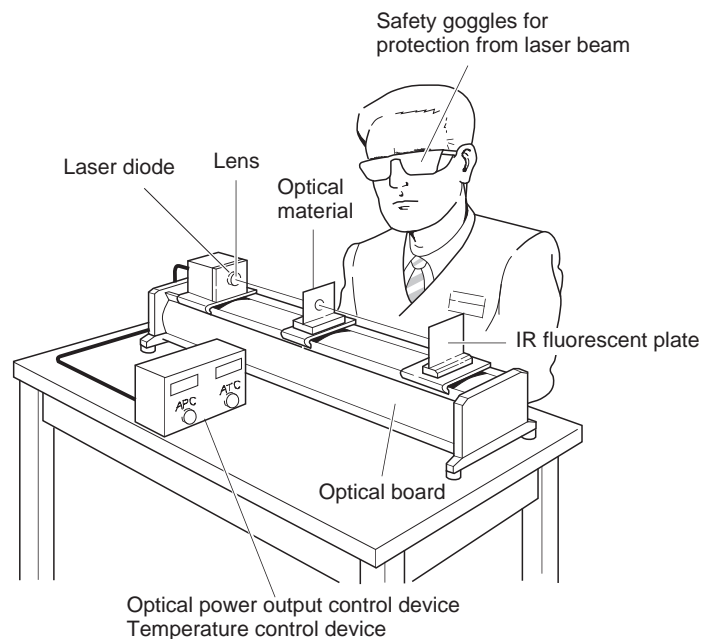
Tc: Case temperature

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current		I <sub>th</sub>		10	20	40	mA
Operating current		I <sub>op</sub>	P <sub>o</sub> = 35mW	35	55	70	mA
Operating voltage		V <sub>op</sub>	P <sub>o</sub> = 35mW	—	2.0	2.5	V
Wavelength		λ	P <sub>o</sub> = 35mW	780	790	800	nm
Radiation angle	Perpendicular	θ <sub>⊥</sub>	P <sub>o</sub> = 35mW	20	24	28	degree
	Parallel	θ <sub>//</sub>		7	9	12	degree
Positional accuracy	Position	ΔX, ΔY, ΔZ	P <sub>o</sub> = 35mW	—	—	±80	μm
	Angle	Δφ <sub>⊥</sub>		—	—	±3	degree
		Δφ <sub>//</sub>		—	—	±3	degree
Differential efficiency		η <sub>D</sub>	P <sub>o</sub> = 35mW	0.7	1.0	1.3	mW/mA
Astigmatism		A <sub>s</sub>	P <sub>o</sub> = 35mW	—	—	6	μm
Monitor current		I <sub>m</sub>	P <sub>o</sub> = 35mW, V <sub>r</sub> = 5V	—	0.10	—	mA

**Handling Precautions**

(1) Eye protection against laser beams

The optical output of laser diodes ranges from several mW to 4W. However the optical power density of the laser beam at the diode chip reaches 1MW/cm<sup>2</sup>. Unlike gas lasers, since laser diode beams are divergent, uncollimated laser diode beams are fairly safe at a laser diode. For observing laser beams, ALWAYS use safety goggles that block infrared rays. Usage of IR scopes, IR cameras and fluorescent plates is also recommended for monitoring laser beams safely.

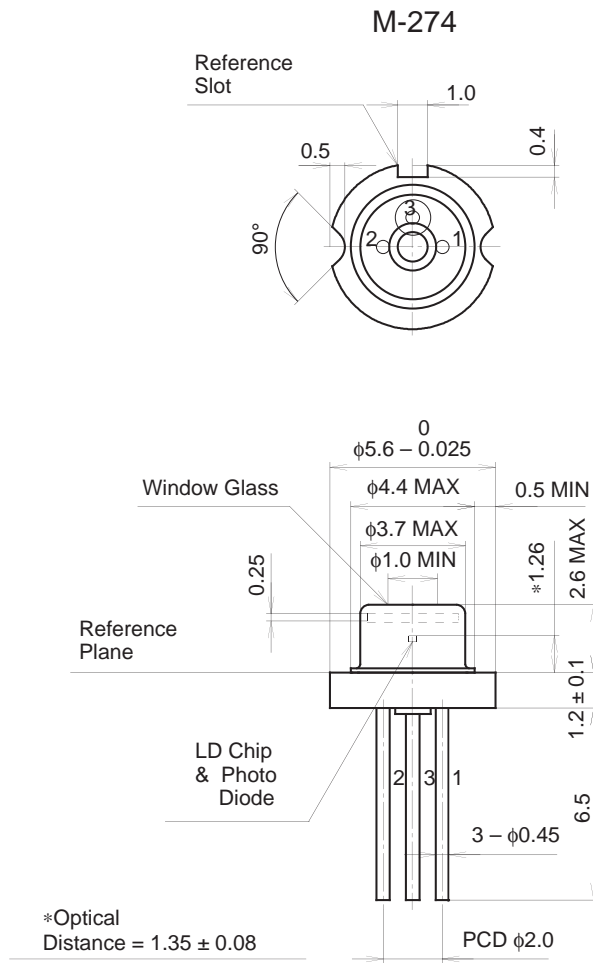


(2) Prevention of surge current and electrostatic discharge

Laser diode is most sensitive to electrostatic discharge among semiconductors. When a large current is passed through the laser diode even for an extremely short time (in the order of nanosecond), the strong light emitted from the laser diode promotes deterioration and then laser diodes are destroyed. Therefore, note that the surge current should not flow the laser diode driving circuit from switches and others. Also, if the laser diode is handled carelessly, it may be destructed instantly because electrostatic discharge is easily applied by a human body. Be great careful about excess current and electrostatic discharge.

Package Outline

Unit: mm



SONY CODE	M-274
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.3g
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