

650nm Index-Guided Red Laser Diode

Description

The SLD1135VS is a index-guided red laser diode for Laser pointer. The wavelength is 20nm shorter than SLD1122VS.

Features

- Small astigmatism (7 μ m typ.)
- Small package (ϕ 5.6mm)
- Single longitudinal mode
- Low operating voltage (2.5V Max)
- Max operating temperature = 40°C (Case temperature)

Applications

Laser pointer

Structure

- AlGaInP MQW laser diode
- PIN photodiode to monitor laser beam output

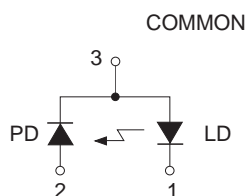
Recommend Optical Power Output

5mW

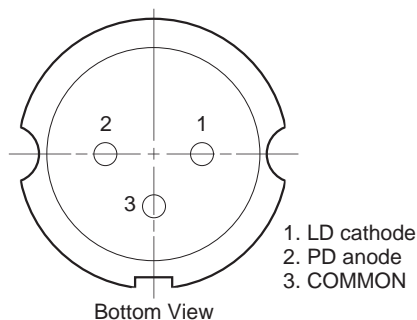
Absolute Maximum Ratings (T_c = 25°C)

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|-------------------------|------------------|------------|----|
| • Optical power output | P _o | 5 | mW |
| • Reverse voltage | V _R | LD 2 | V |
| | | PD 15 | V |
| • Operating temperature | T _{opr} | -10 to +40 | °C |
| • Storage temperature | T _{stg} | -40 to +85 | °C |

Connection Diagram



Pin Configuration



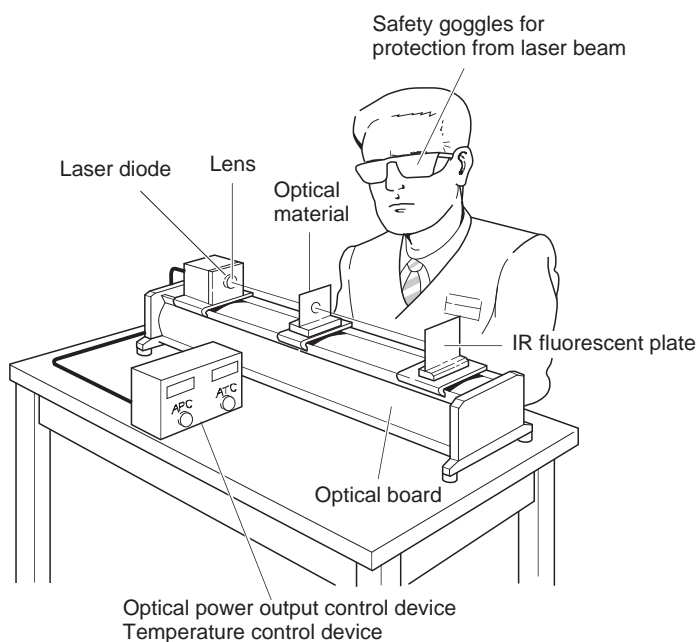
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Electrical and Optical Characteristics ($T_c = 25^\circ\text{C}$)T_c: Case temperature

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current		I _{th}			30	40	mA
Operating current		I _{op}	P _o = 5mW		35	45	mA
Operating voltage		V _{op}	P _o = 5mW		2.2	2.5	V
Wavelength		λ _p	P _o = 5mW		650	660	nm
Radiation angle	Perpendicular	θ _⊥	P _o = 5mW	22	30	40	degree
	Parallel	θ _{//}		5	7	12	degree
Positional accuracy	Position	ΔX, ΔY, ΔZ	P _o = 5mW			±150	μm
	Angle	Δφ _{//}				±3	degree
		Δφ _⊥				±3	degree
Differential efficiency		η _D	P _o = 5mW	0.3	0.6	0.9	mW/mA
Astigmatism		As	P _o = 5mW		7	15	μm
Monitor current		I _{mon}	P _o = 5mW, V _R = 5V	0.05	0.1	0.25	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/cm². 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.

Unit: mm

Reference Slot

1.0

0.5

0.4

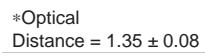
90°

1

2

3

Technical drawing of a circular part with a reference slot. The drawing shows a top view of a circular component with a central hole. A reference slot is located at the top. Dimensions are provided: 1.0 for the slot width, 0.5 for the slot depth, and 0.4 for the thickness of the part. A 90° angle is indicated for the slot. Three small circles are labeled 1, 2, and 3, likely indicating specific features or points of interest.



PACKAGE WEIGHT	0.3g
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