

5mW Visible Laser Diode

Description

The SLD1121VS is a red laser diode designed for bar code readers and measuring instruments. This features a small package and lower power consumption.

Features

- Visible light (670 nm typ.)
- Small package ( $\phi$  5.6 mm)
- Low operating current ( $I_{op}$  = 50 mA typ.)
- Fundamental transverse mode

Applications

- Bar code readers
- Measuring instruments

Structure

- AlGaInP quantum well structure laser diode
- PIN photo diode for optical power output monitor

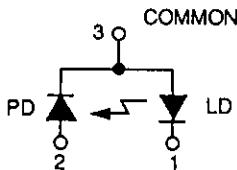
Recommended Operating Output

- 3mW

Absolute Maximum Ratings ( $T_c = 25^\circ C$ )

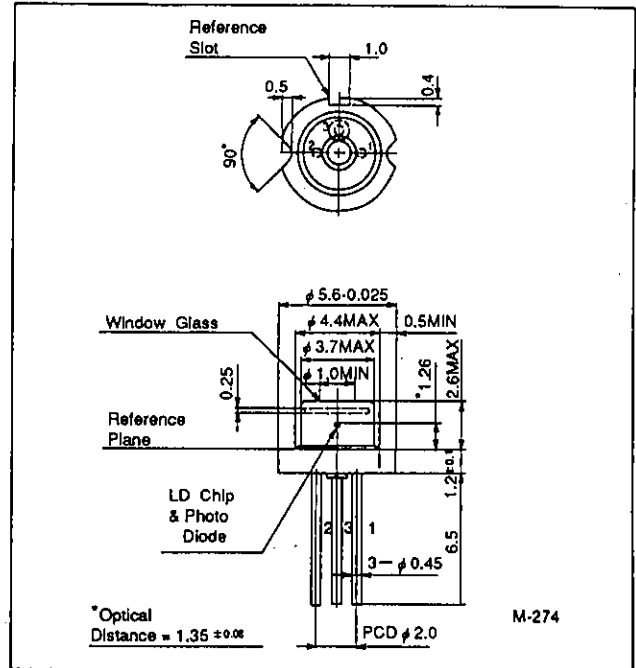
• Optical power output	$P_o$	5	mW
• Reverse voltage	$V_R$ LD	2	V
	PD	15	V
• Operating temperature	$T_{opr}$	-10 to +50	$^\circ C$
• Storage temperature	$T_{stg}$	-40 to +85	$^\circ C$

Connection Diagram

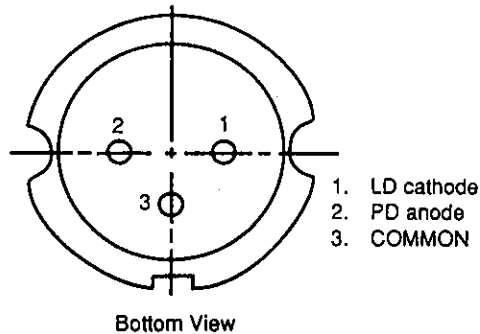


Package Outline

Unit : mm



Pin Configuration



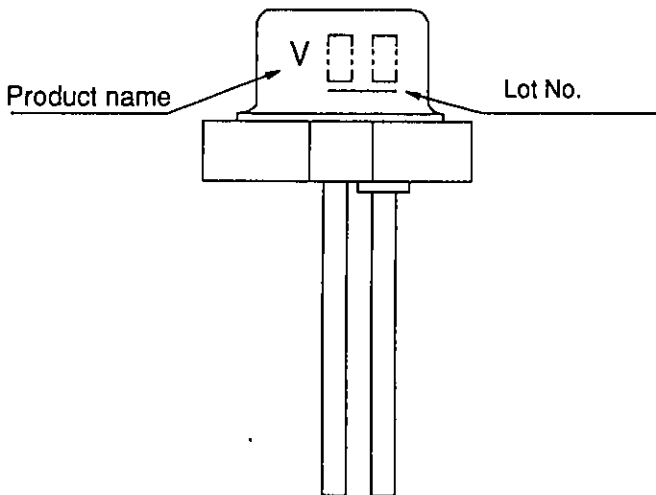
Sony reserves the right to change products and specifications without prior notice. This information does not convey any license by any implication or otherwise under any patents or other right. Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits.

Electrical and Optical Characteristics (Tc = 25°C)

Tc = Case temperature

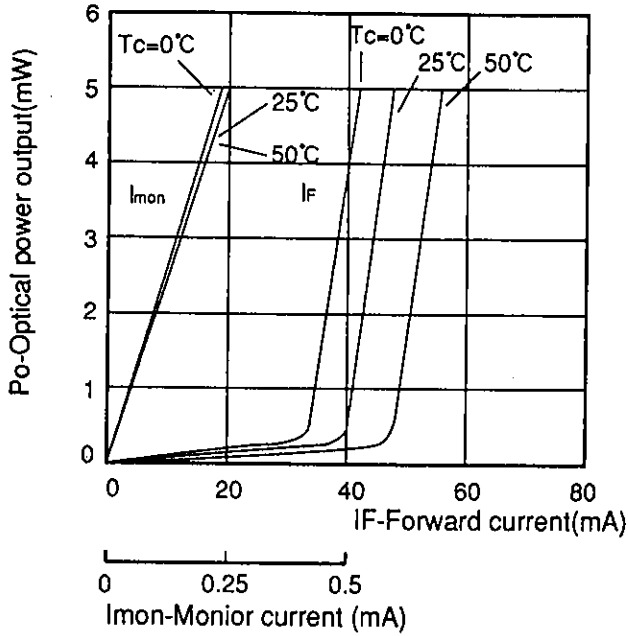
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Threshold current	Ith			40	60	mA	
Operating current	Iop	Po=3mW		50	70	mA	
Operating voltage	Vop	Po=3mW		2.2	2.8	V	
Wavelength	$\lambda$	Po=3mW	660	670	680	nm	
Radiation angle	Perpendicular	$\theta \perp$	Po=3mW	24	32	35	degree
	Parallel	$\theta //$		7	11	15	degree
Positional accuracy	Position	$\Delta X, \Delta Y, \Delta Z$	Po=3mW			$\pm 80$	$\mu m$
	Angle	$\Delta \phi //$				$\pm 3$	degree
		$\Delta \phi \perp$				$\pm 3$	degree
Differential efficiency	$\eta D$	Po=3mW	0.15	0.45	0.7	mW/mA	
Astigmatism	As	$ Z // - Z \perp $		32		$\mu m$	
Monitor current	Imon	Po=3mW, Vr=5V	0.08	0.20	0.60	mA	

Marking

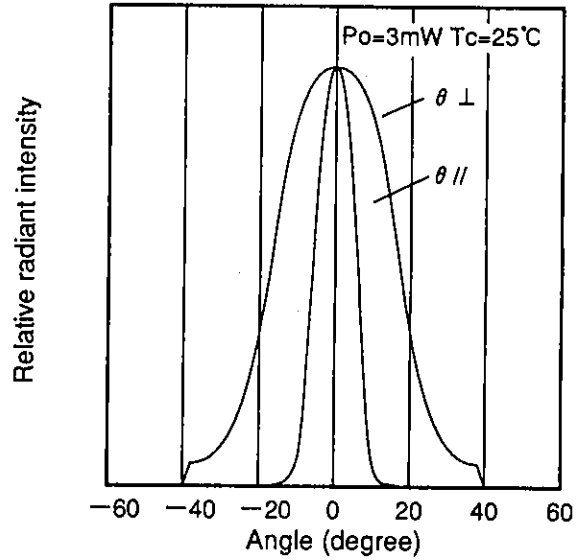


Example of Representative Characteristics

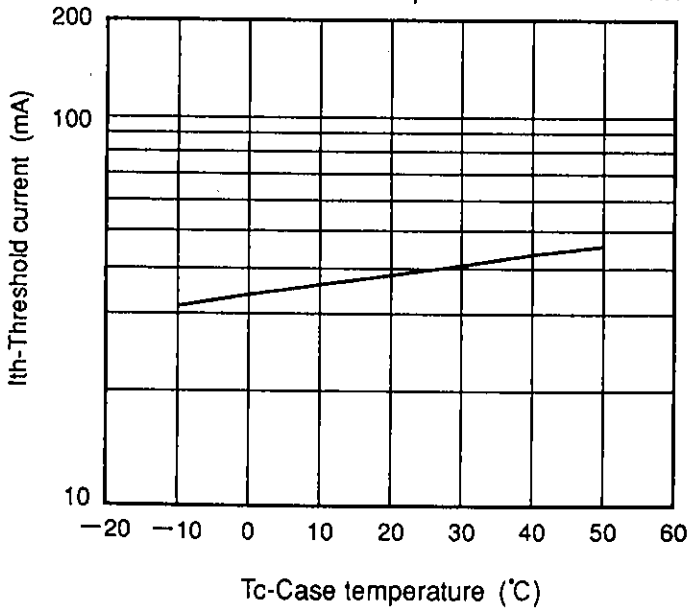
Optical power output vs. Forward current characteristics  
Optical power output vs. Monitor current characteristics



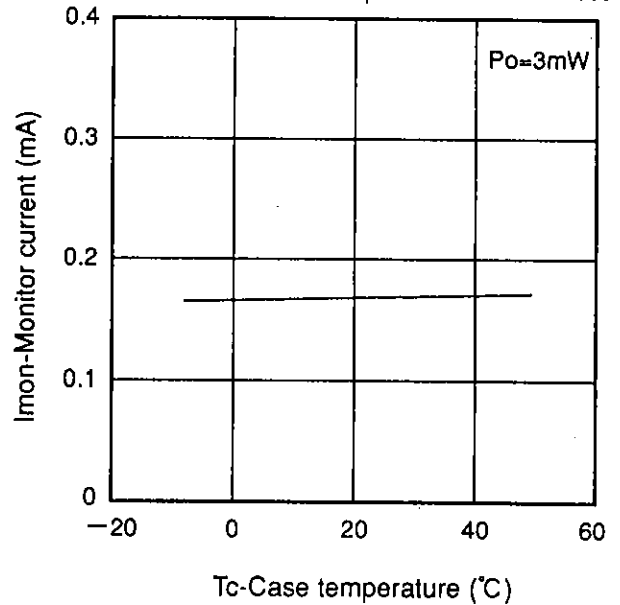
Far field pattern (FFP)



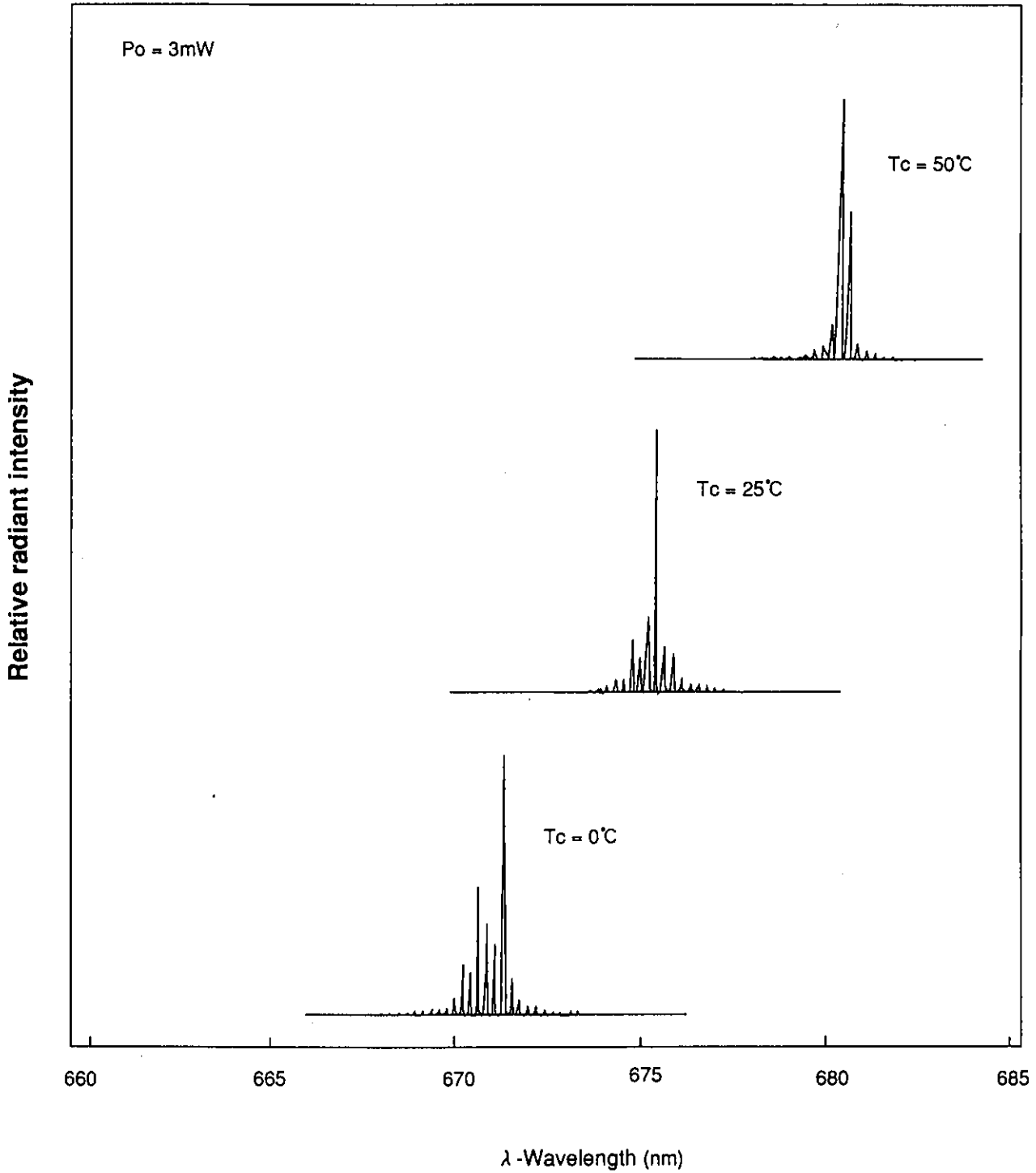
Threshold current vs. Temperature characteristics



Monitor current vs. Temperature characteristics



Temperature dependence of spectrum



Power dependence of spectrum

