

**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 (670nm typ.)
- Small package ( $\phi 5.6\text{mm}$ )
- Low operating current ( $I_{op} = 50\text{mA}$  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

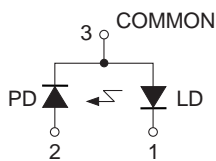
**Recommended Optical Power Output**

3mW

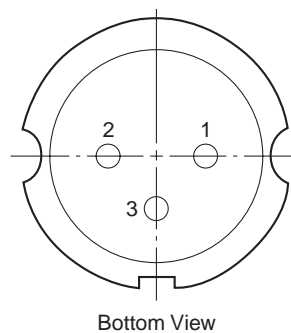
**Absolute Maximum Ratings** ( $T_c = 25^\circ\text{C}$ )

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

**Cinnection Diagram**



**Pin Configuration**



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

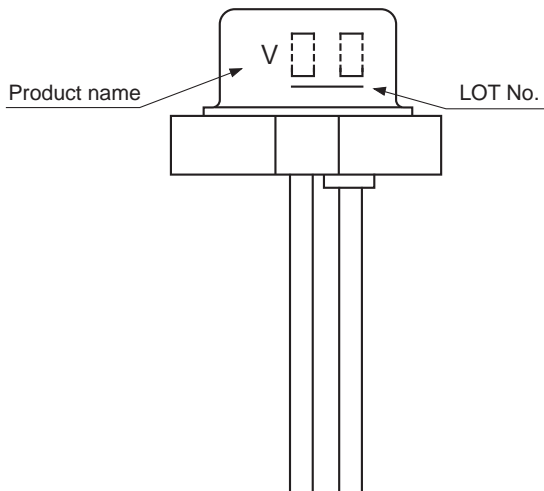
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**Electrical and Optical Characteristics (T<sub>c</sub> = 25°C)**

T<sub>c</sub>: Case temperature

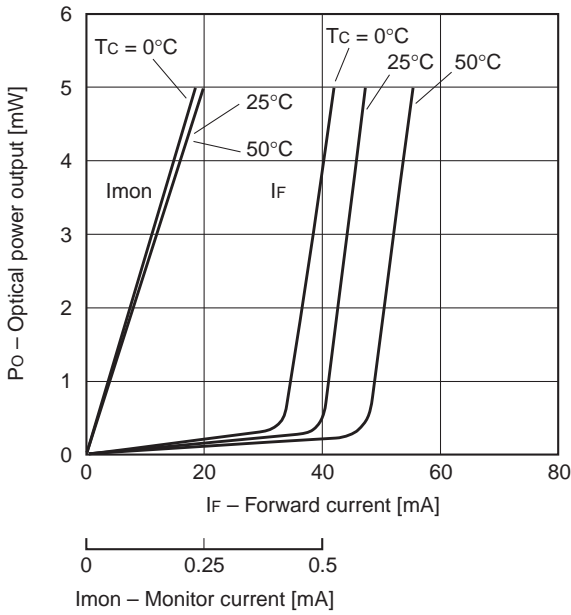
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Threshold current	I <sub>th</sub>			40	60	mA	
Operating current	I <sub>op</sub>	P <sub>O</sub> = 3mW		50	70	mA	
Operating voltage	V <sub>op</sub>	P <sub>O</sub> = 3mW		2.2	2.8	V	
Wavelength	λ	P <sub>O</sub> = 3mW	660	670	680	nm	
Radiation angle	Perpendicular	θ <sub>⊥</sub>	P <sub>O</sub> = 3mW	24	32	35	degree
	Parallel	θ <sub>//</sub>		7	11	15	degree
Positional accuracy	Position	ΔX, ΔY, ΔZ	P <sub>O</sub> = 3mW			±80	μm
	Angle	Δφ <sub>//</sub>				±3	degree
		Δφ <sub>⊥</sub>				±3	degree
Differential efficiency	η <sub>D</sub>	P <sub>O</sub> = 3mW	0.15	0.45	0.7	mW/mA	
Astigmatism	A <sub>s</sub>	Z <sub>//</sub> - Z <sub>⊥</sub>		32		μm	
Monitor current	I <sub>mon</sub>	P <sub>O</sub> = 3mW, V <sub>R</sub> = 5V	0.08	0.20	0.60	mA	

**Marking**

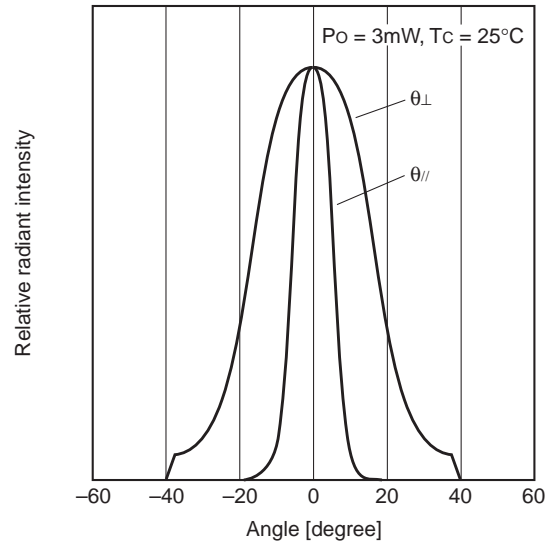


Example of Representative Characteristics

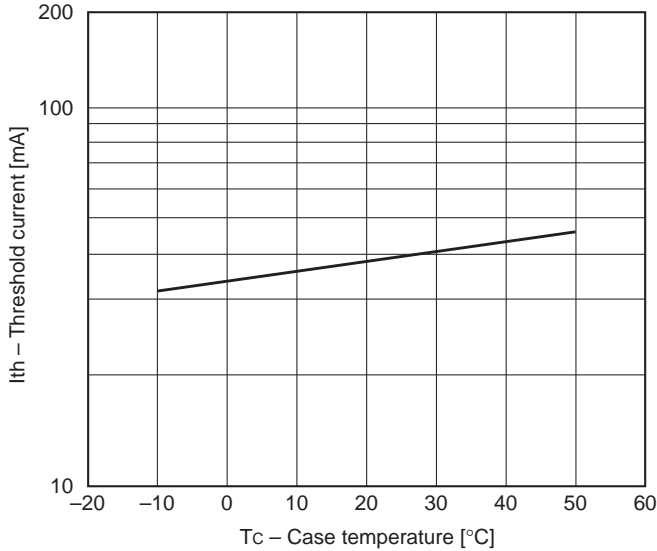
Optical power output vs. Forward current characteristics  
Optical power output vs. Monitor current characteristics



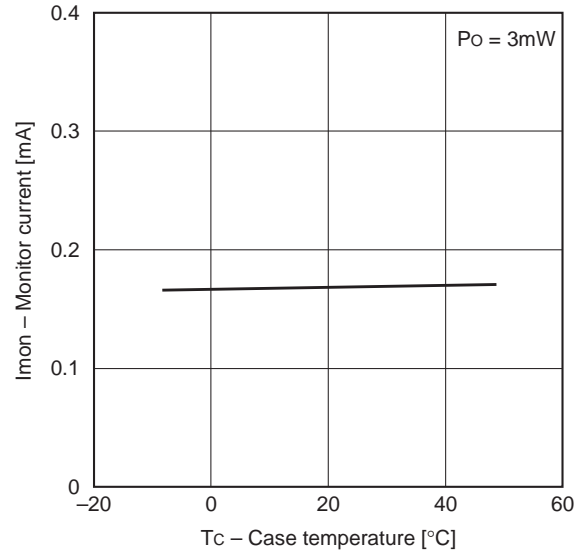
Far field pattern (FFP)



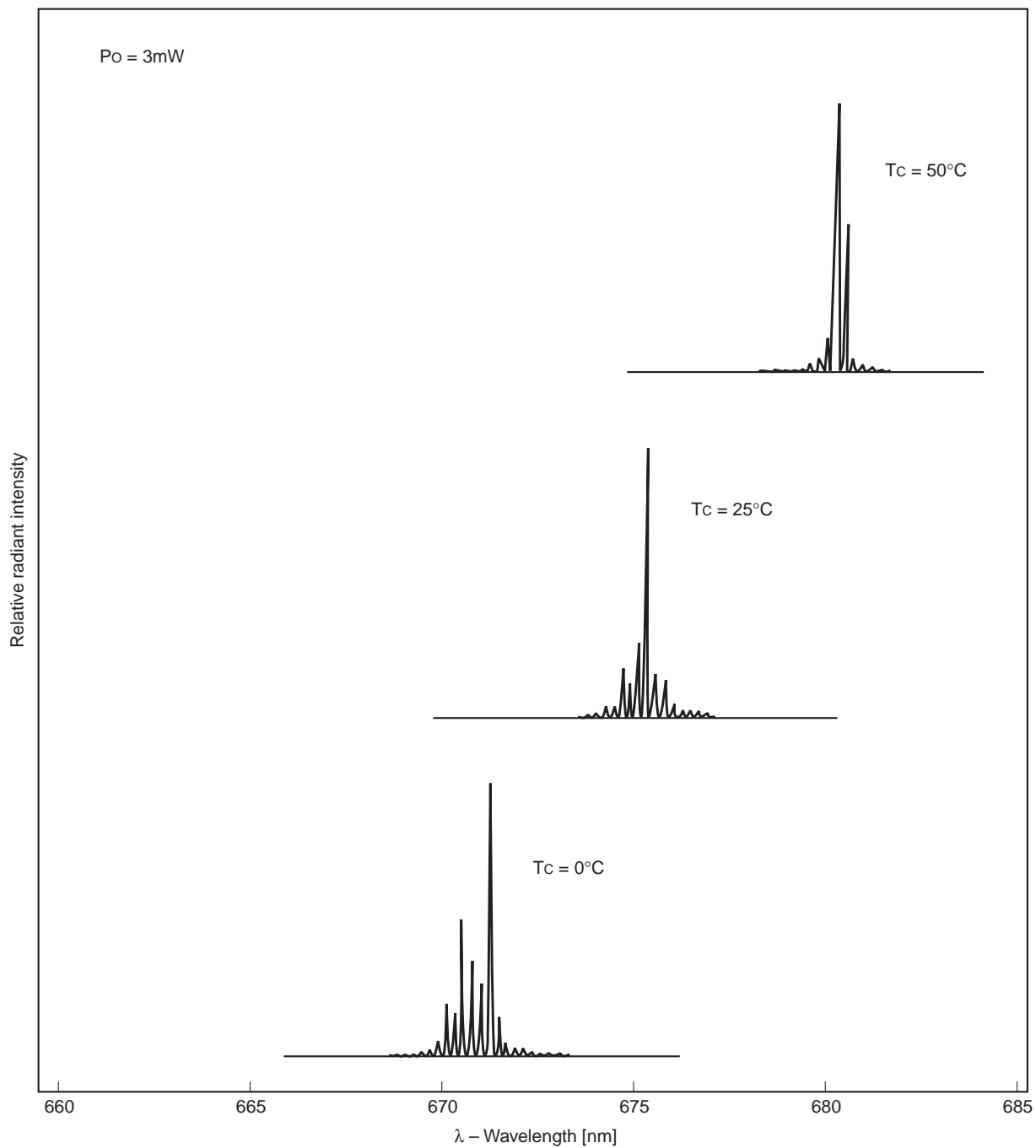
Threshold current vs. Temperature characteristics



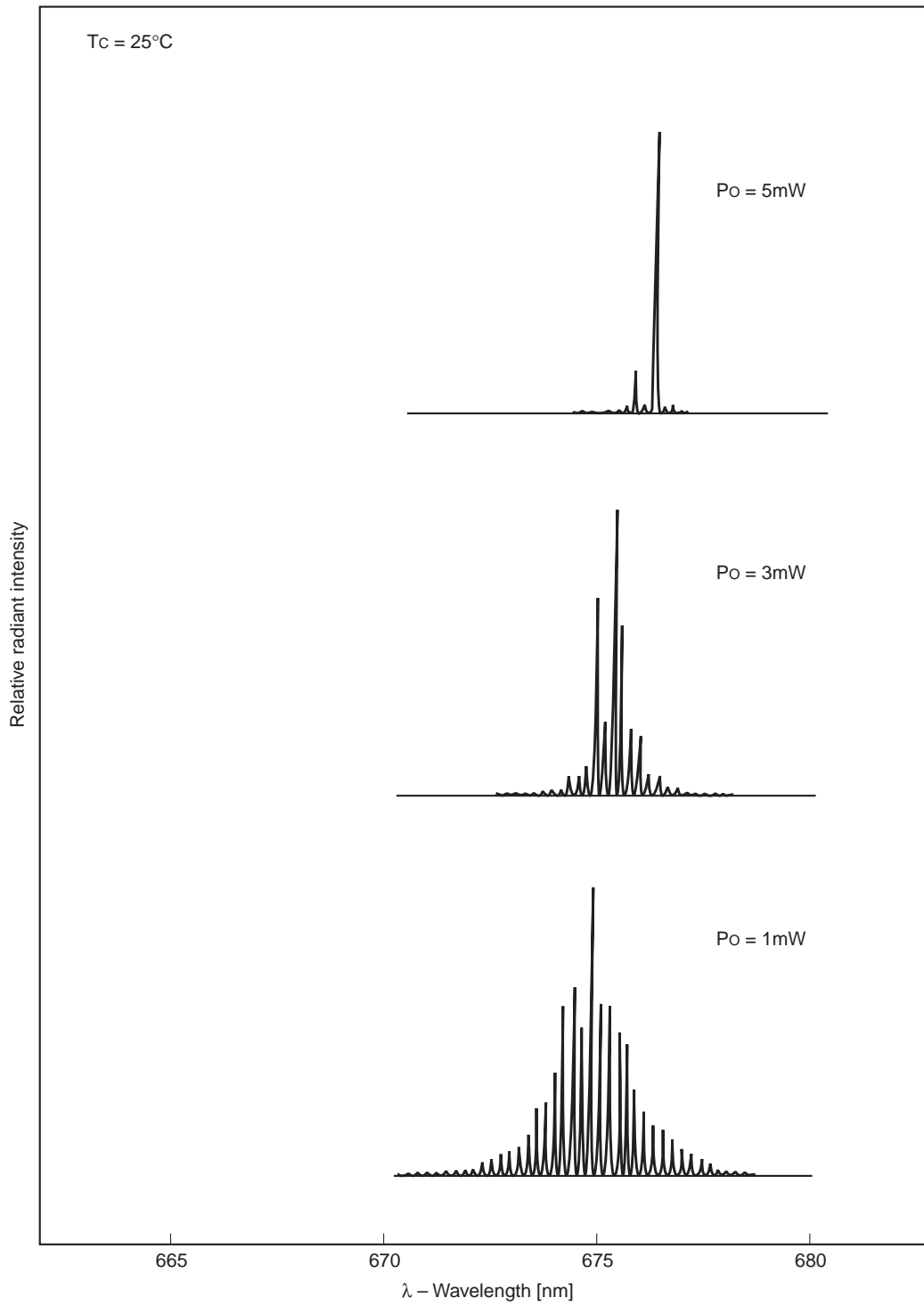
Monitor current vs. Temperature characteristics



Temperature dependence of spectrum

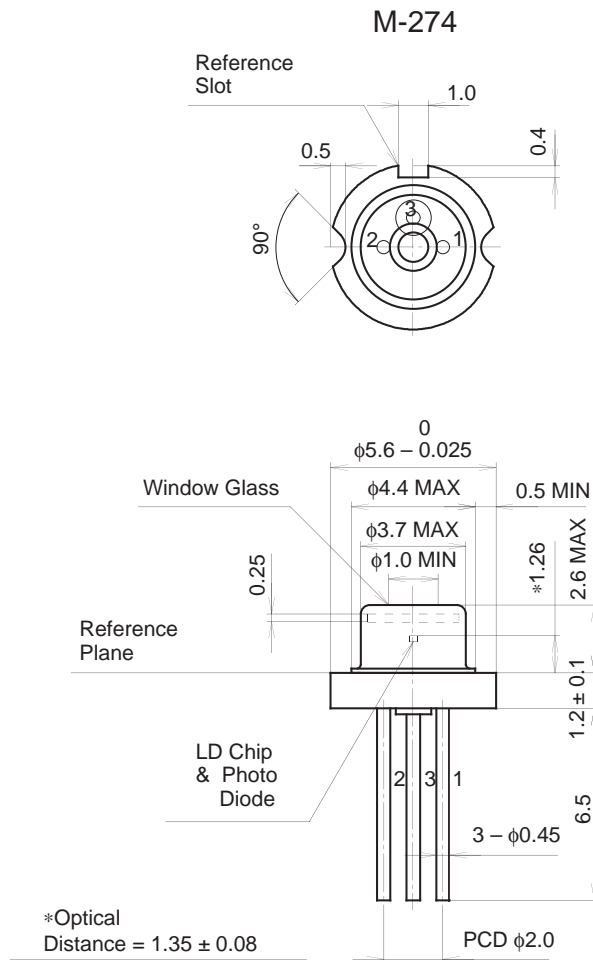


Power dependence of spectrum



Package Outline

Unit: mm



SONY CODE	M-274
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.3g
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