

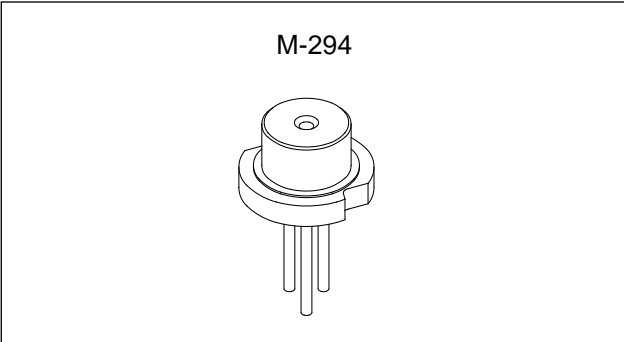
5mW Visible Laser Diode

Description

The SLD1122VS is a red laser diode designed for laser pointers. This features a small package and lower power consumption.

Features

- Visible light (670nm typ.)
- Small package (φ5.6mm)
- Low operating current (I_{op} = 50mA typ.)
- Low operating voltage (V_{op} = 2.4V max.)
- Fundamental transverse mode



Applications

Laser pointers

Structure

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

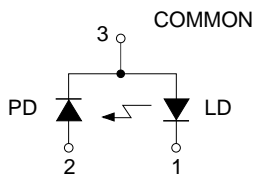
Recommended Operating Output

3mW

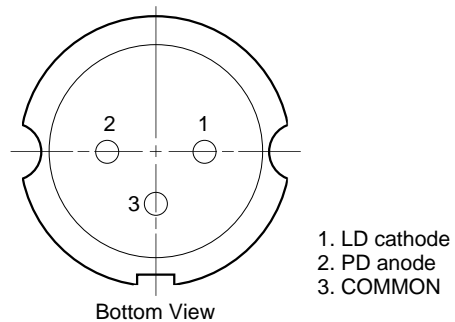
Absolute Maximum Ratings (T_c = 25°C)

- | | | | |
|-------------------------|-------------------|------------|----|
| • Optical power output | P _o | 5 | mW |
| • Reverse voltage | V _R LD | 2 | V |
| | PD | 15 | V |
| • Operating temperature | T _{opr} | -10 to +50 | °C |
| • Storage temperature | T _{stg} | -40 to +85 | °C |

Cinnection Diagram



Pin Configuration



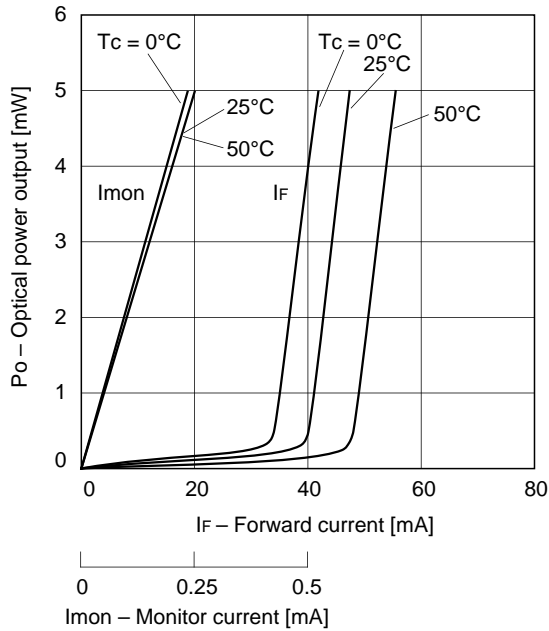
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Electrical and Optical Characteristics (T_c = 25°C)T_c: Case temperature

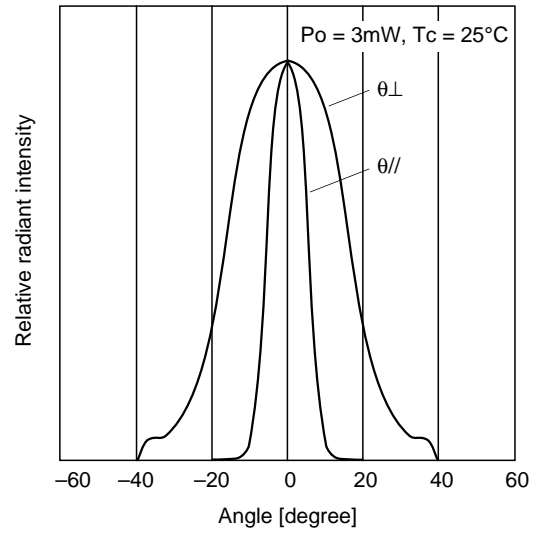
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Threshold current	I _{th}			40	60	mA	
Operating current	I _{op}	P _o = 3mW		50	70	mA	
Operating voltage	V _{op}	P _o = 3mW		2.2	2.4	V	
Wavelength	λ	P _o = 3mW	660	670	685	nm	
Radiation angle	Perpendicular	P _o = 3mW	θ _⊥	24	32	40	degree
	Parallel		θ _{//}	7	11	15	degree
Positional accuracy	Position	P _o = 3mW	ΔX, ΔY, ΔZ		±150	μm	
	Angle		Δφ _{//}		±4	degree	
			Δφ _⊥		±4	degree	
Differential efficiency	η _D	P _o = 3mW	0.15	0.45	0.7	mW/mA	
Astigmatism	A _s	Z _{//} - Z _⊥		32		μm	
Monitor current	I _{mon}	P _o = 3mW, V _r = 5V	0.08	0.20	0.60	mA	

Example of Representative Characteristics

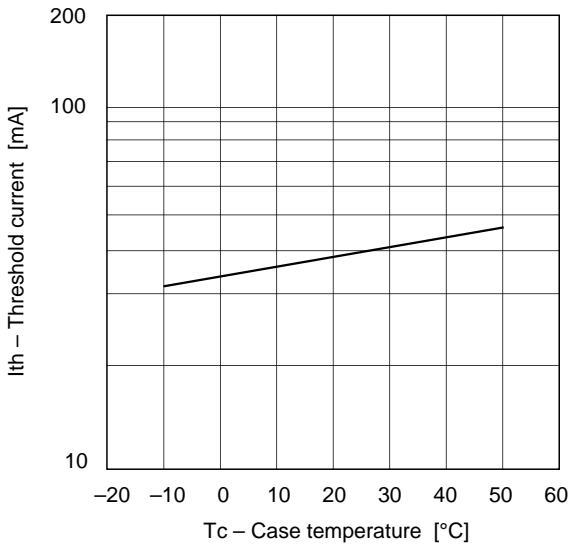
Optical power output vs. Forward current characteristics
Optical power output vs. Monitor current characteristics



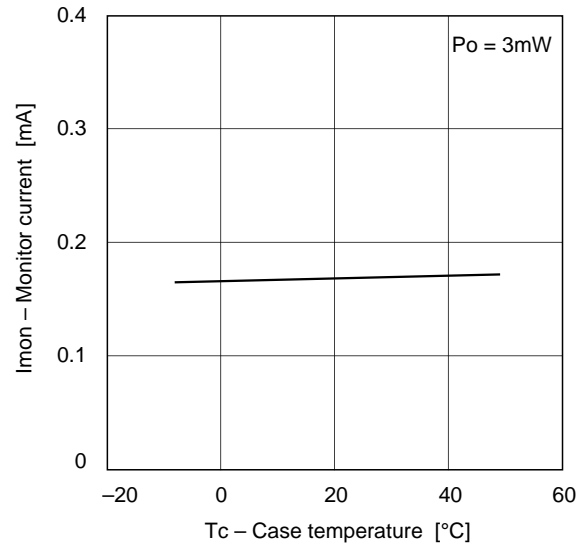
Far field pattern (FFP)



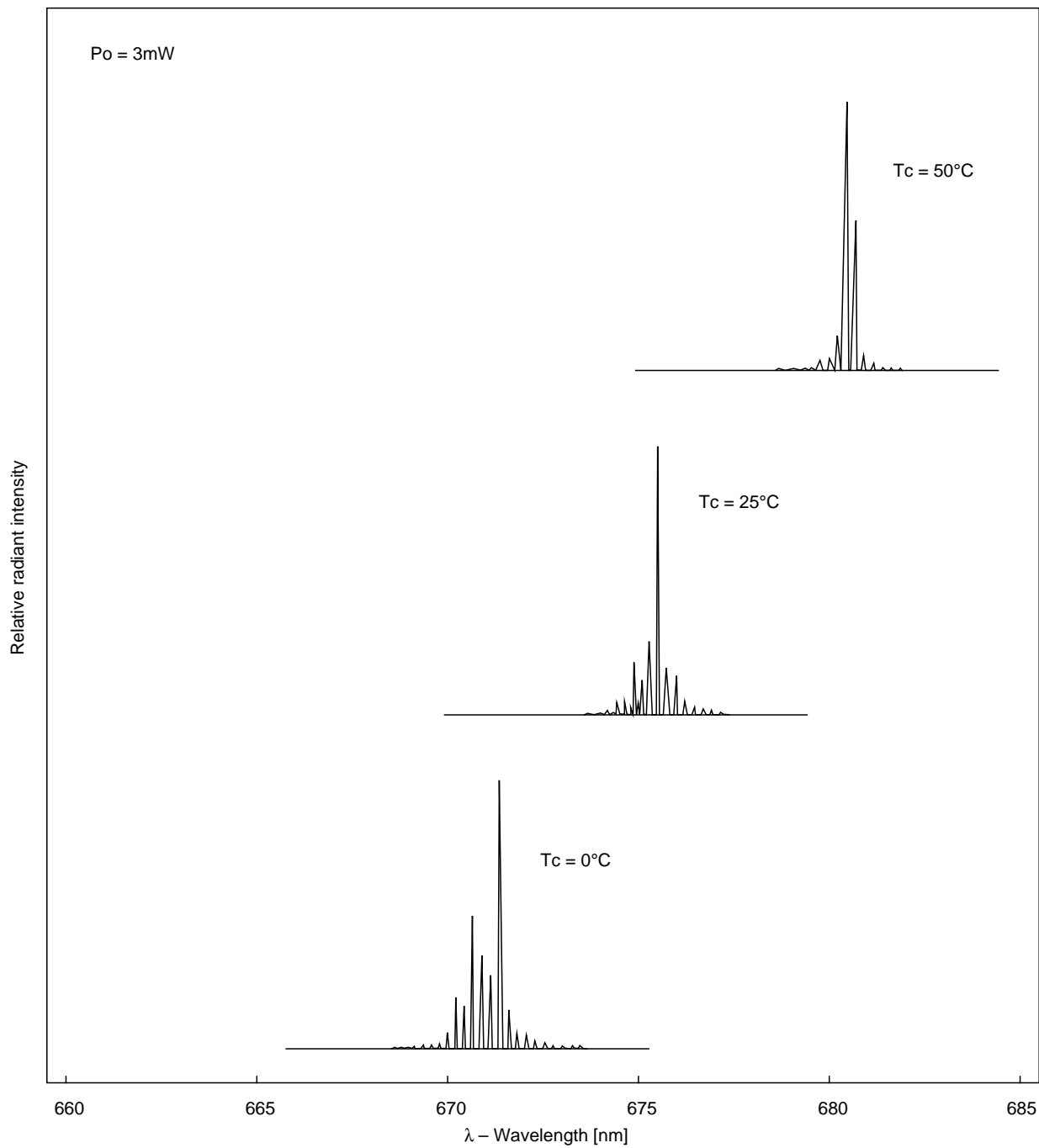
Threshold current vs. Temperature characteristics



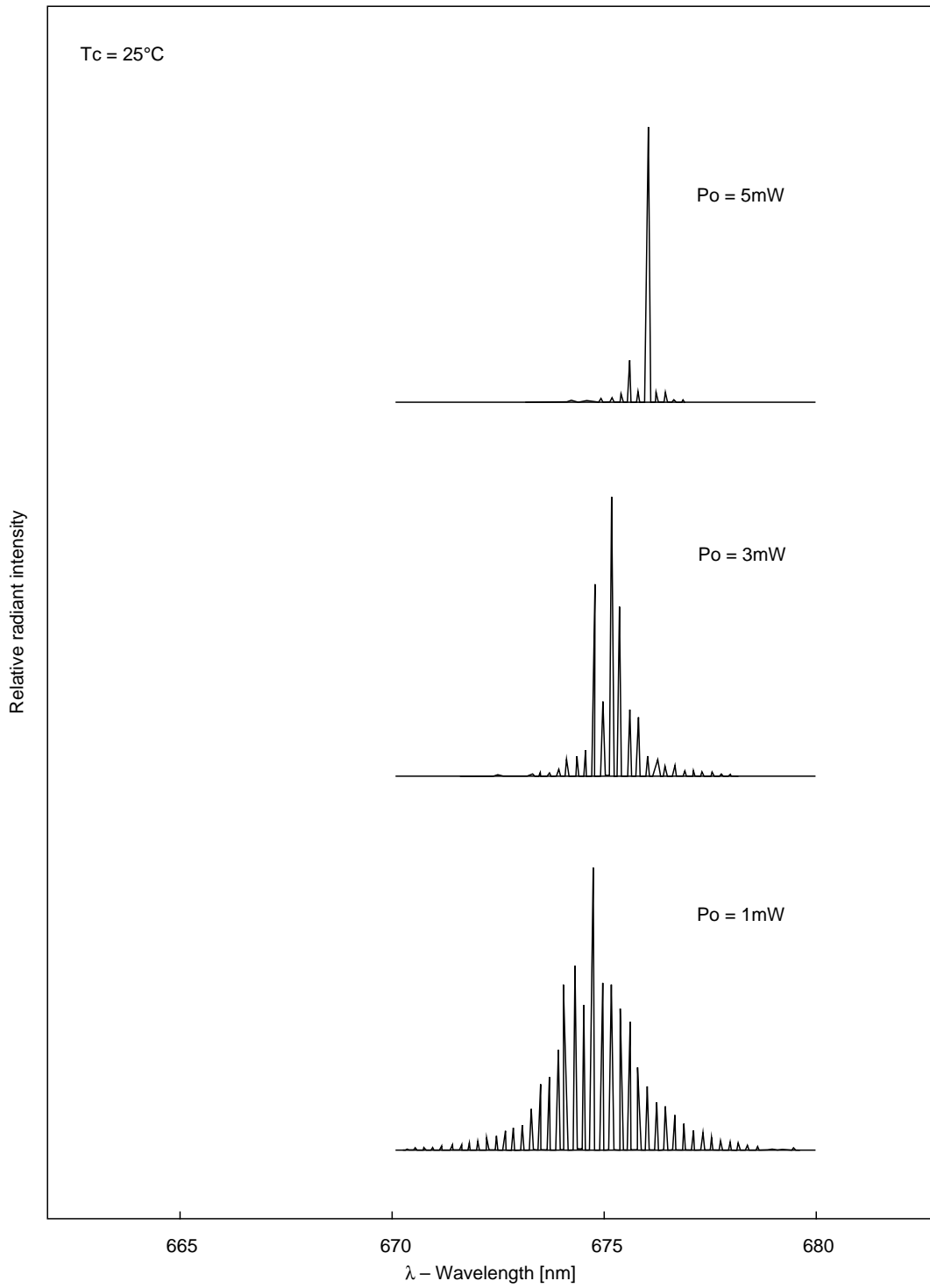
Monitor current vs. Temperature characteristics



Temperature dependence of spectrum



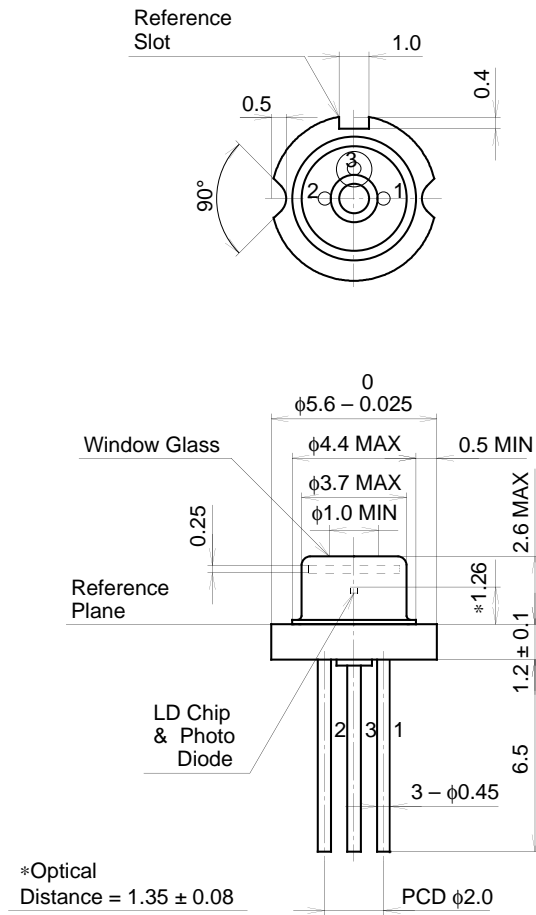
Power dependence of spectrum



Package Outline

Unit: mm

M-294



SONY CODE	M-294
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.3g
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