

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

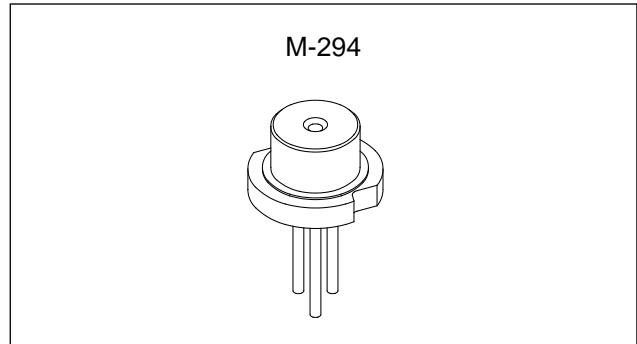
- AlGaInP quantum well structure laser diode
- PIN photo diode for optical power output monitor

Recommended Operating Output

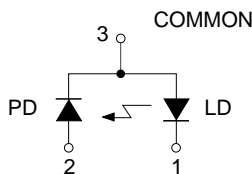
3mW

Absolute Maximum Ratings (T_c = 25°C)

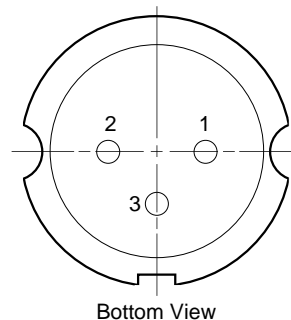
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|-------------------------|-------------------|------------|----|
| • Optical power output | P _o | 5 | mW |
| • Reverse voltage | V _R LD | 2 | V |
| | PD | 15 | V |
| • Operating temperature | T _{opr} | -10 to +50 | °C |
| • Storage temperature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



Connection Diagram



Pin Configuration



1. LD cathode
2. PD anode
3. COMMON

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Electrical and Optical Characteristics (T_c = 25°C)

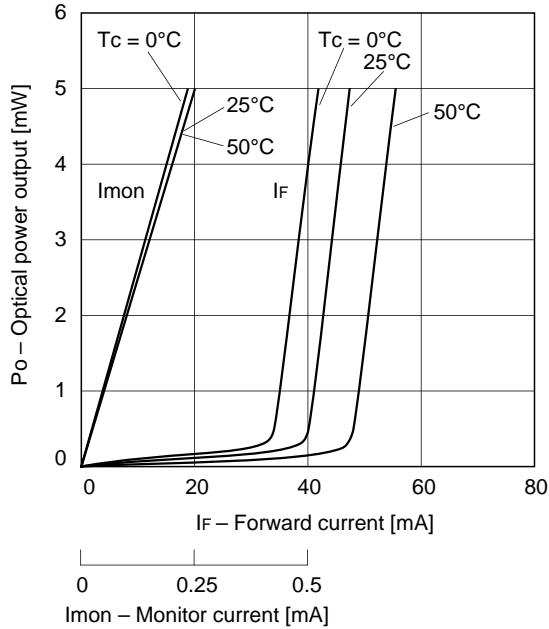
T_c: Case temperature

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	θ _⊥	P _o = 3mW	24	32	40	degree
	Parallel			θ _{//}	7	11	15
Positional accuracy	Position	ΔX, ΔY, ΔZ	P _o = 3mW			±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	

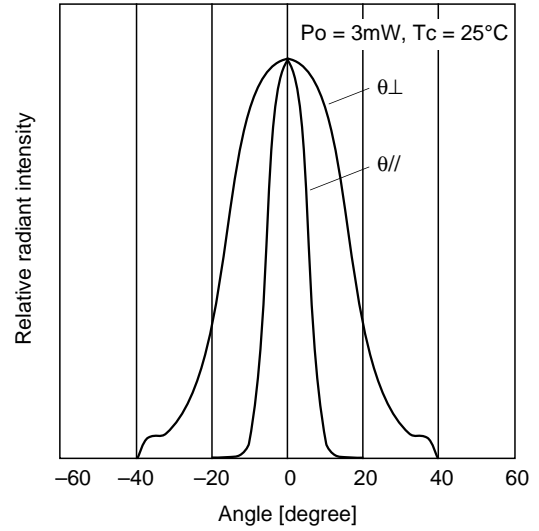
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Example of Representative Characteristics

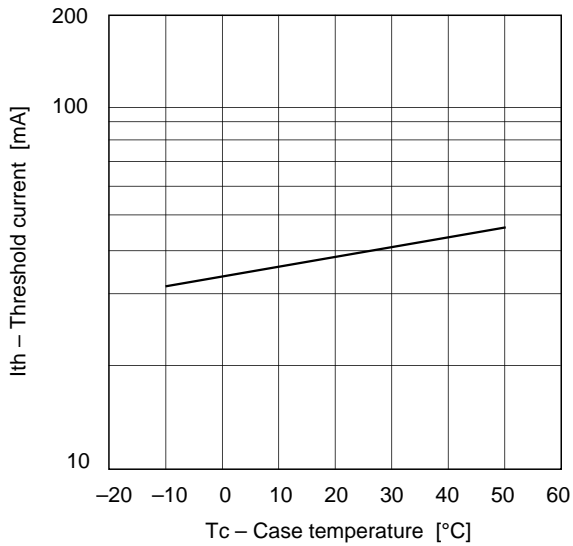
Optical power output vs. Forward current characteristics
Optical power output vs. Monitor current characteristics



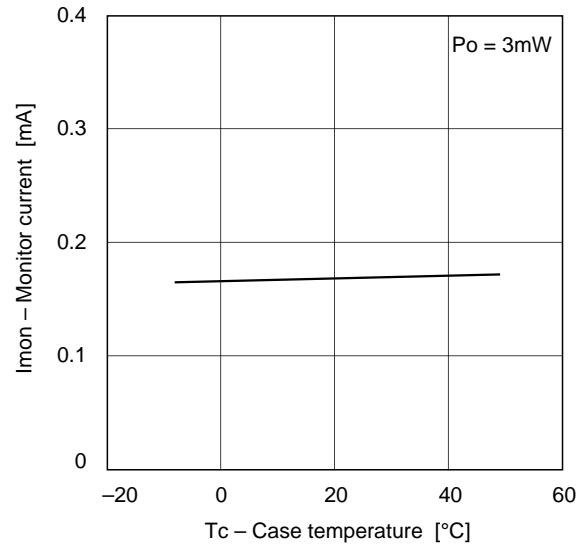
Far field pattern (FFP)



Threshold current vs. Temperature characteristics

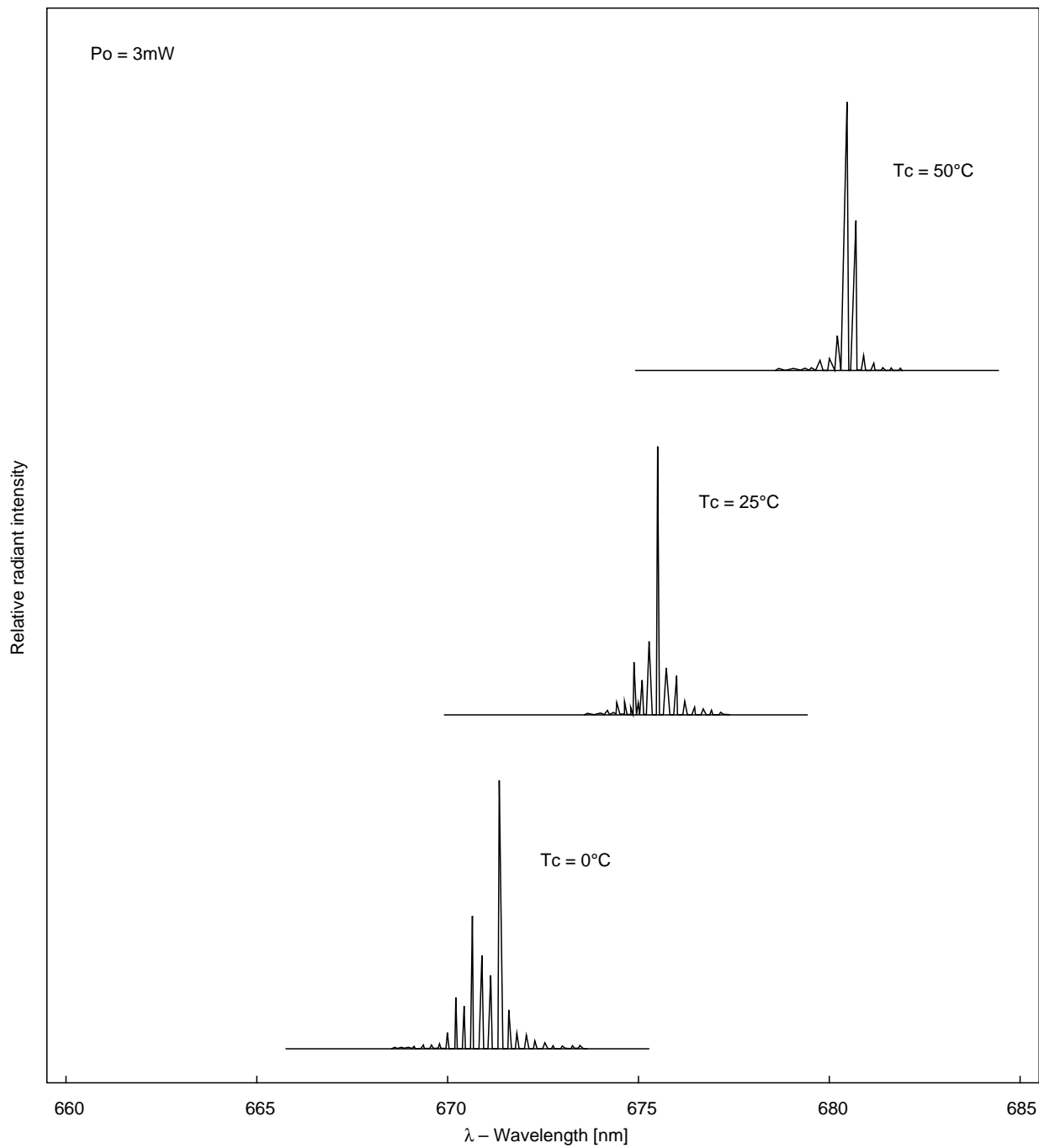


Monitor current vs. Temperature characteristics



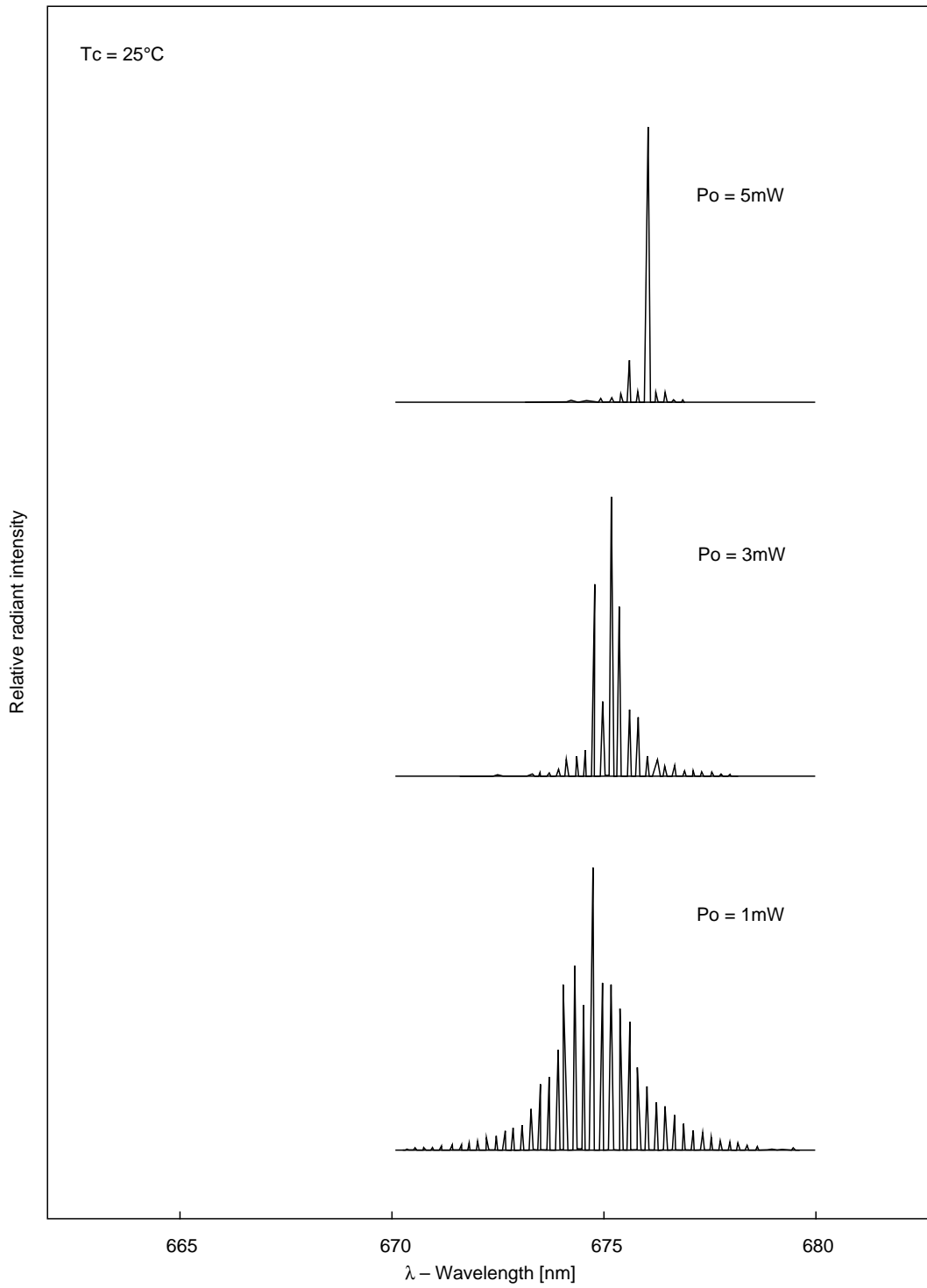
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Temperature dependence of spectrum



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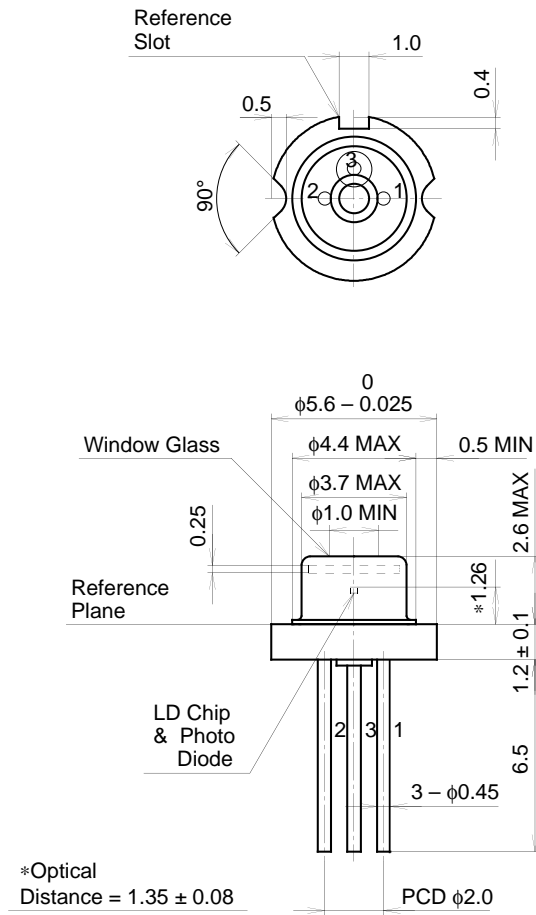
Power dependence of spectrum



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Package Outline Unit: mm

M-294



SONY CODE	M-294
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.3g
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