

**Index-Guided AlGaAs Laser Diode**

**Description**

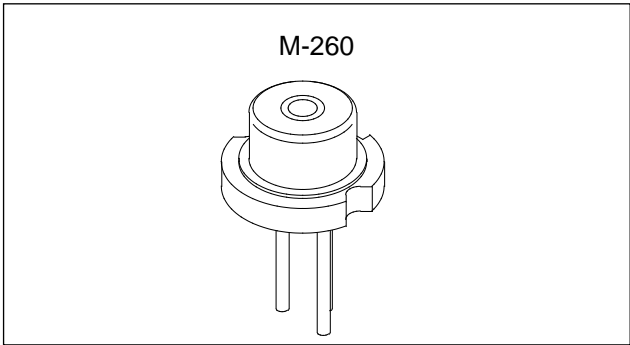
The SLD114VS is an index-guided AlGaAs laser diode with the excellent droop characteristics.

**Features**

- Low droop
- Small astigmatism
- Small package ( $\phi 5.6\text{mm}$ )

**Applications**

Laser beam printers



**Structure**

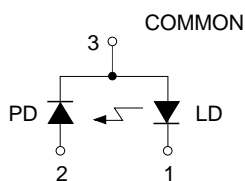
- AlGaAs double hetero structured laser diode
- PIN photodiode for optical power output monitor

**Recommended Operating Optical Power Output**      3mW

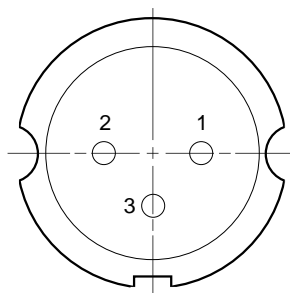
**Absolute Maximum Ratings** ( $T_c = 25^\circ\text{C}$ )

• Optical power output	Po		5	mW
• Reverse voltage	VR	LD	2	V
		PD	15	V
• Operating temperature	Topr		-10 to +60	°C
• Storage temperature	Tstg		-40 to +85	°C

**Connection Diagram**



**Pin Configuration**



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

Bottom View

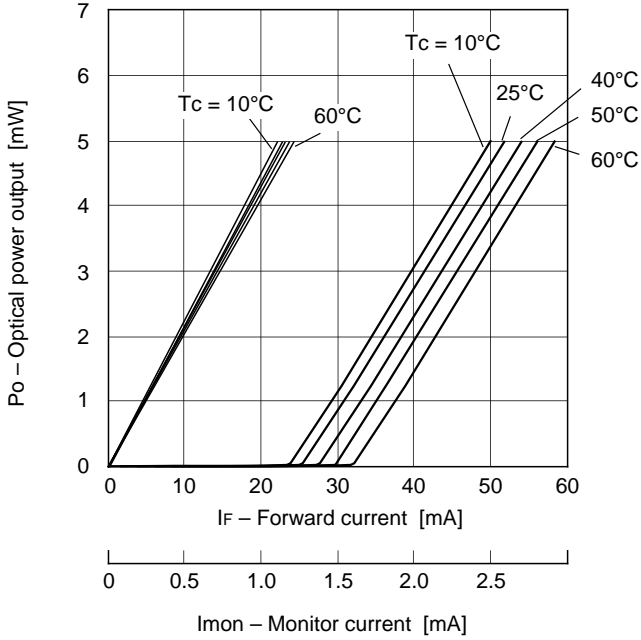
Sony reserves the right to change products and specifications without prior notice. This information does not convey any license by any implication or otherwise under any patents or other right. Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot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

Optical and Electrical Characteristics ( $T_c = 25^\circ\text{C}$ )T<sub>c</sub>: Case temperature

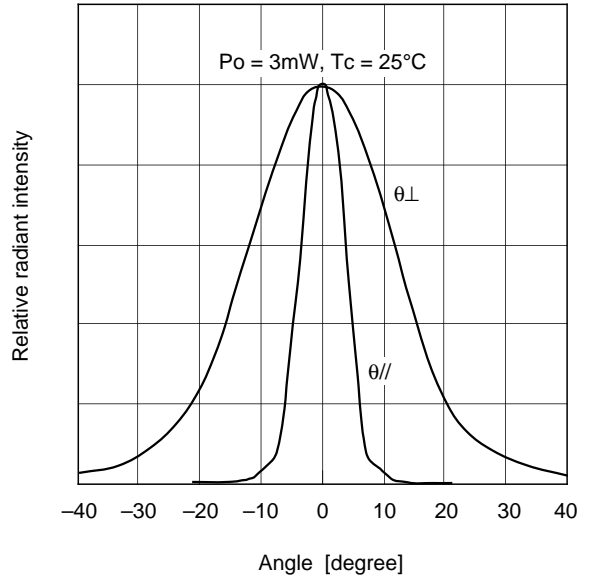
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Threshold current	I <sub>th</sub>		10	25	45	mA	
Operating current	I <sub>op</sub>	P <sub>o</sub> = 3mW	20	40	60	mA	
Operating voltage	V <sub>op</sub>	P <sub>o</sub> = 3mW	—	1.9	2.5	V	
Wavelength	λ	P <sub>o</sub> = 3mW	760	780	800	nm	
Radiation angle	Perpendicular	θ <sub>⊥</sub>	P <sub>o</sub> = 3mW	20	30	45	degree
	Parallel	θ <sub>//</sub>		6	10	15	degree
Positional accuracy	Position	ΔX, ΔY, ΔZ	P <sub>o</sub> = 3mW	—	—	±80	μm
	Angle	Δφ <sub>⊥</sub>		—	—	±3	degree
		Δφ <sub>//</sub>		—	—	±2	degree
Differential efficiency	η <sub>D</sub>	P <sub>o</sub> = 3mW	0.1	0.25	0.5	mW/mA	
Astigmatism	A <sub>s</sub>	P <sub>o</sub> = 3mW	—	5	15	μm	
Monitor current	I <sub>m</sub>	P <sub>o</sub> = 3mW, V <sub>r</sub> = 5V	0.3	0.5	1.2	mA	
Droop	ΔP	P <sub>o</sub> = 3mW	—	—	10	%	

Example of Representative Characteristics

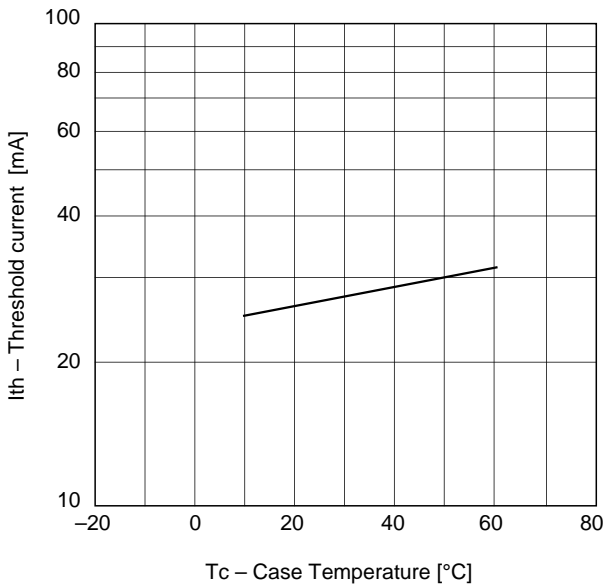
Optical power output vs. Forward current characteristics  
Optical power output vs. Monitor current characteristics



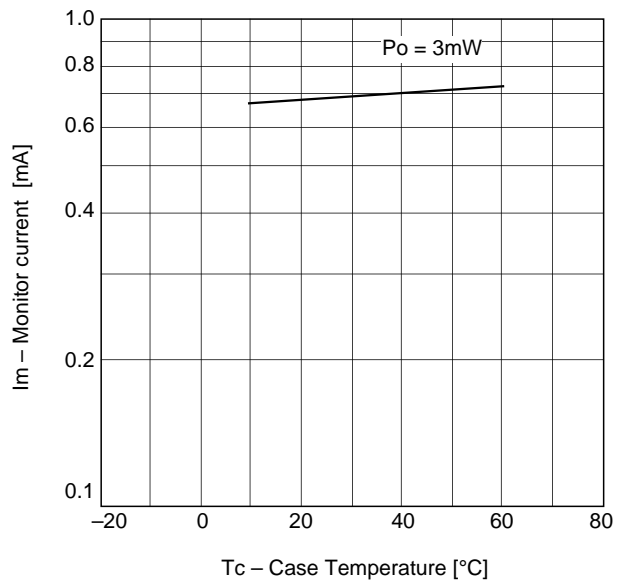
Far field pattern (FFP)



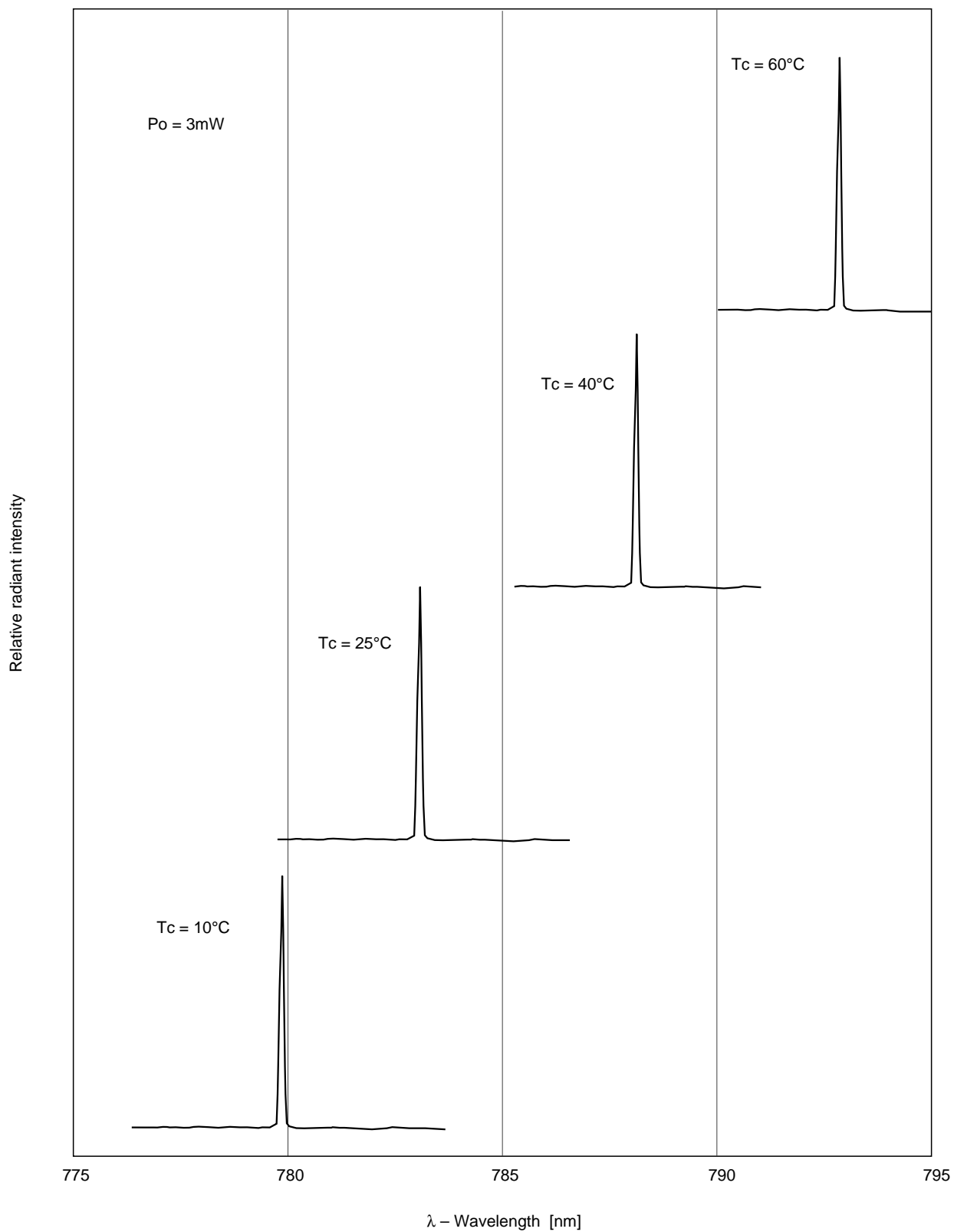
Threshold current vs. Temperature characteristics



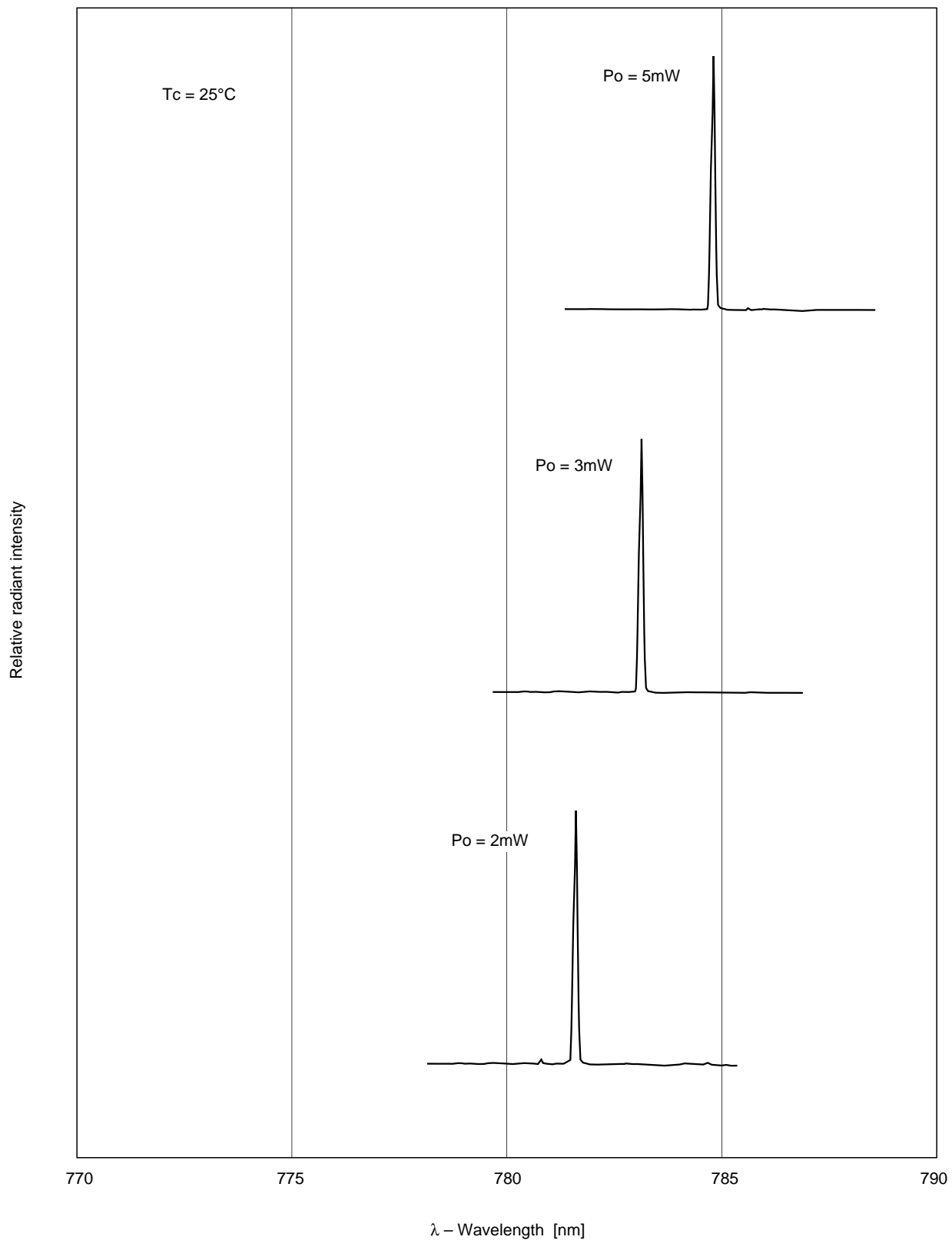
Monitor current vs. Temperature characteristics



Temperature dependence of spectrum



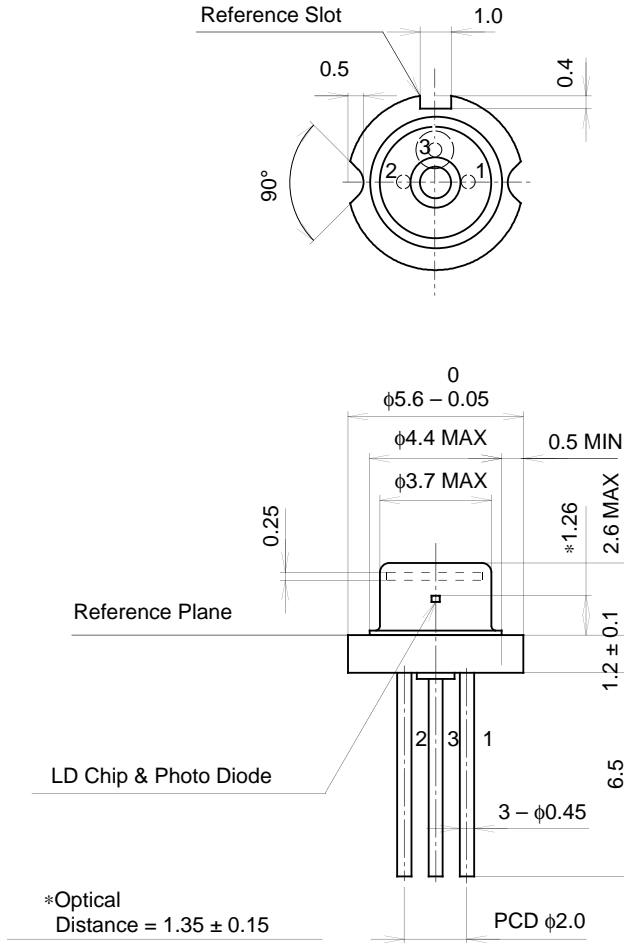
Power output dependence of spectrum



Package Outline

Unit: mm

M-260



SONY CODE	M-260
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.3g
----------------	------