

Index-Guided AlGaAs Laser Diode

Description

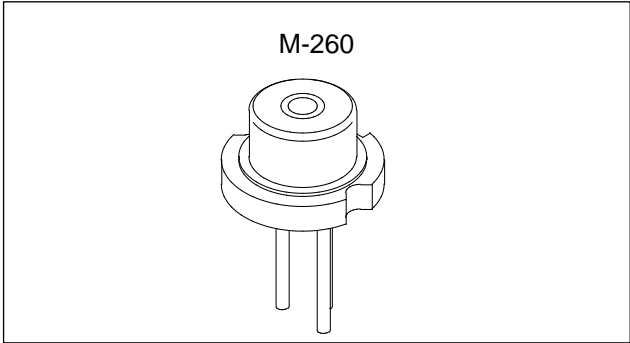
The SLD114VS is an index-guided AlGaAs laser diode with the excellent droop characteristics.

Features

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

Applications

Laser beam printers



Structure

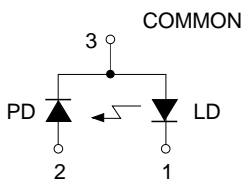
- AlGaAs double hetero structured laser diode
- PIN photodiode for optical power output monitor

Recommended Operating Optical Power Output 3mW

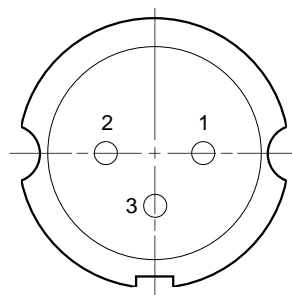
Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

• 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

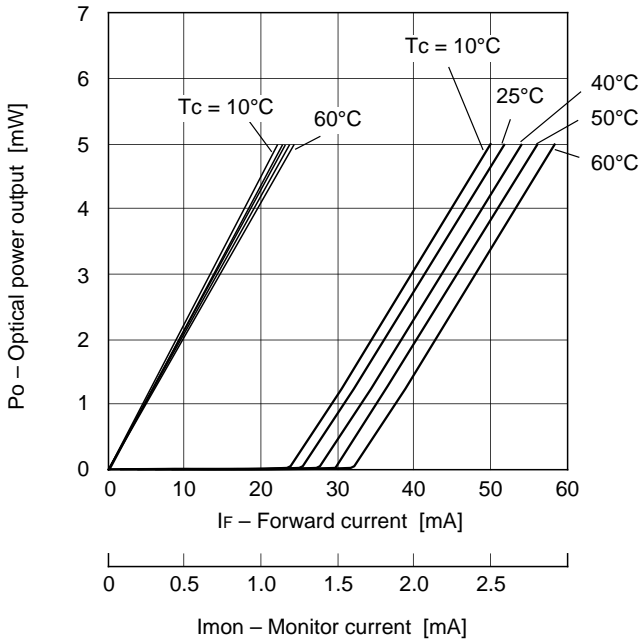
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Optical and Electrical Characteristics (T_c = 25°C)T_c: Case temperature

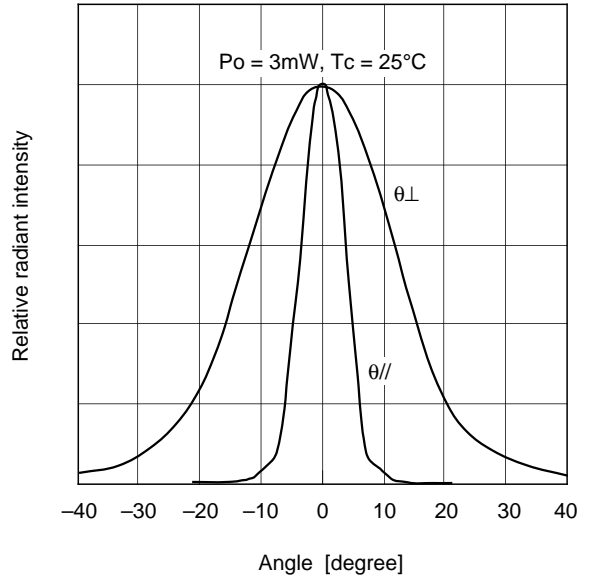
Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current		I _{th}		10	25	45	mA
Operating current		I _{op}	P _o = 3mW	20	40	60	mA
Operating voltage		V _{op}	P _o = 3mW	—	1.9	2.5	V
Wavelength		λ	P _o = 3mW	760	780	800	nm
Radiation angle	Perpendicular	θ _⊥	P _o = 3mW	20	30	45	degree
	Parallel	θ _{//}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

Example of Representative Characteristics

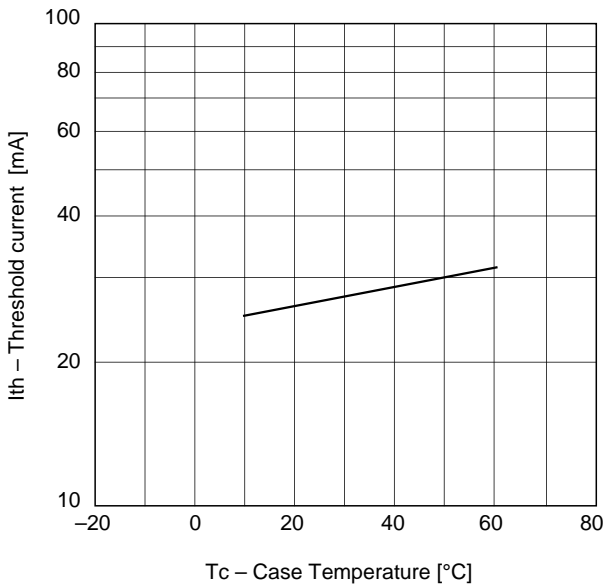
Optical power output vs. Forward current characteristics
Optical power output vs. Monitor current characteristics



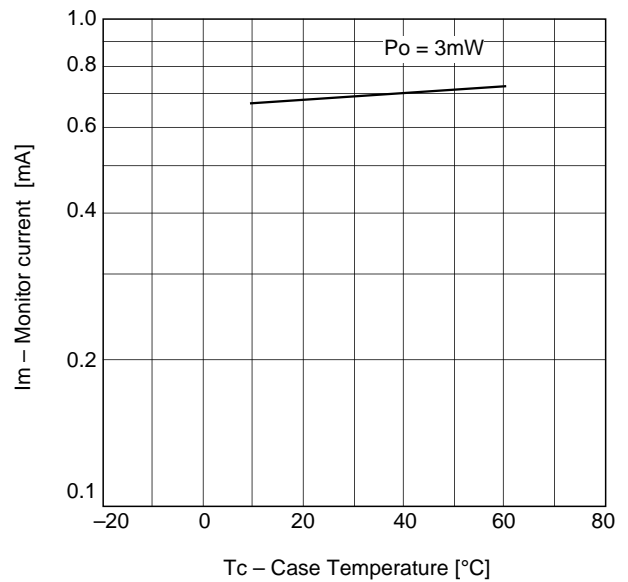
Far field pattern (FFP)



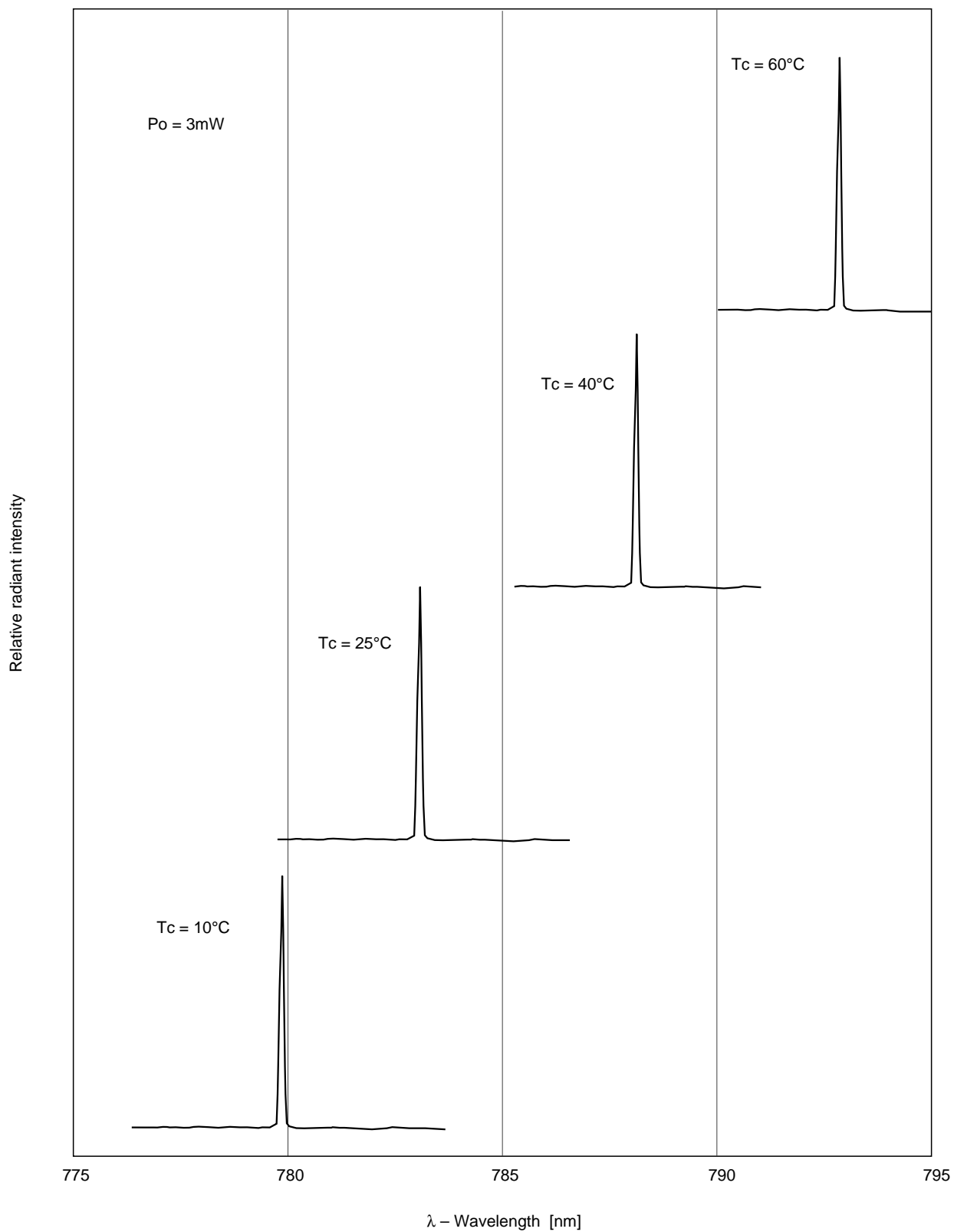
Threshold current vs. Temperature characteristics



Monitor current vs. Temperature characteristics



Temperature dependence of spectrum



Power output dependence of spectrum

