

AlGaAs Laser Diode

Description

The SLD104AU is a AlGaAs laser diode developed for positive power supplies. In comparison with the SLD104U, this device attains even lower power consumption levels.

Features

- Low power consumption
- Single power supply
- Low noise
- Microminiaturized package ($\phi 5.6\text{mm}$)

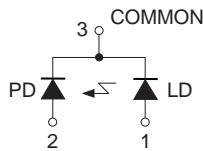
Structure

- AlGaAs double hetero-type laser diode
- PIN photo diode for laser optical power output monitor

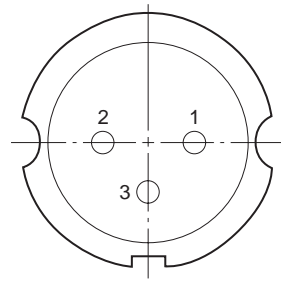
Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

• Optical power output	P_o	5	mW
• Reverse voltage	V_R LD	2	V
	PD	15	V
• Operating temperature	T_{opr}	-10 to +60	$^\circ\text{C}$
• Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

Connection Diagram



Pin Configuration



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

Bottom View

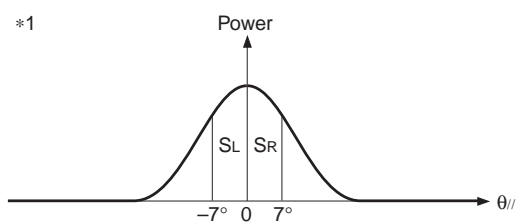
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Electrical and Optical Characteristics (T_c = 25°C)

T_c: Case temperature

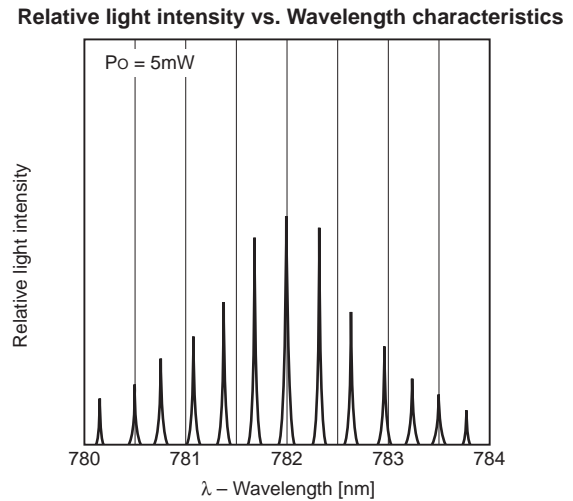
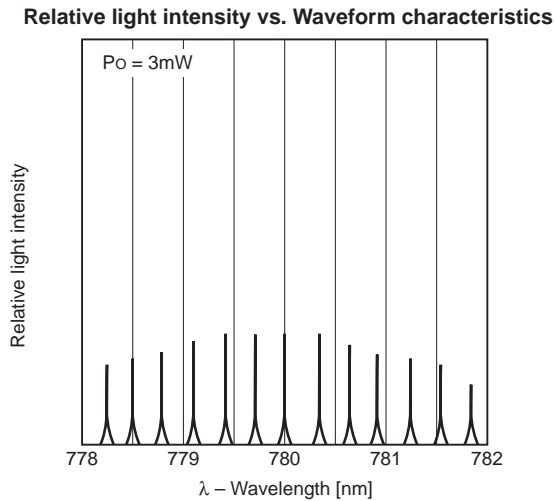
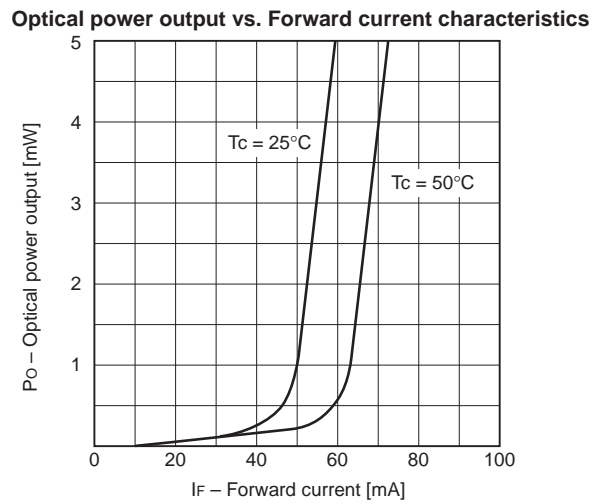
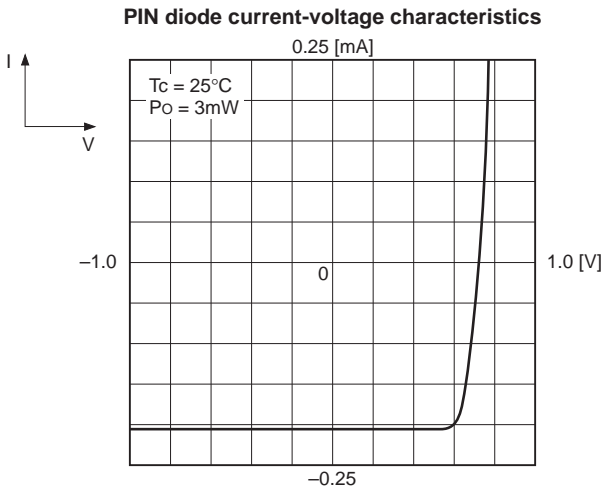
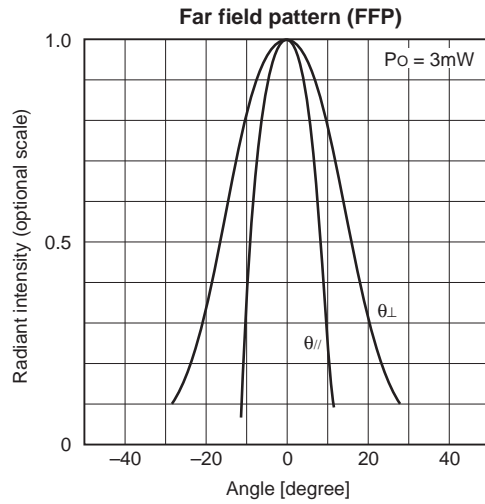
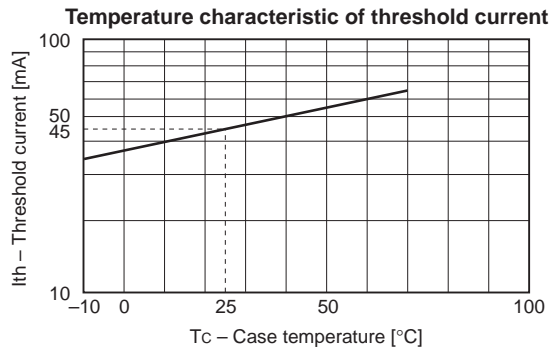
Item	Symbol	Condition	Min.	Typ.	Max.	Unit	
Threshold current	I _{th}			45	60	mA	
Operating current	I _{op}	P _o = 3mW		52	70	mA	
Operating voltage	V _{op}	P _o = 3mW	1.7	1.9	2.5	V	
Wavelength	λ	P _o = 3mW	760	780	800	nm	
Monitor current	I _m	P _o = 3mW, V _R = 5V	0.08	0.15	0.4	mA	
Radiation angle (F. W. H. M.*)	Perpendicular	θ _⊥	P _o = 3mW	20	32	45	degree
	Parallel	θ _{//}		9	17	25	degree
	Asymmetry	ΔS _R *1				20	%
Positional accuracy	Position	ΔX, ΔY, ΔZ	P _o = 3mW			±150	μm
	Angle	Δφ _⊥				±3	degree
Differential efficiency	η _D	P _o = 3mW	0.2	0.45	0.7	mW/mA	
Astigmatism	A _s	P _o = 3mW Z _{//} - Z _⊥			15	μm	
Signal to noise ratio	S/N	f _c = 7.5MHz Δf = 30kHz P _o = 4mW		88		dB	
Dark current of PD	I _D	V _R = 5V			150	nA	
Capacitance of PD	C _T	V _R = 5V, f = 1MHz			30	pF	

* F. W. H. M. : Full Width at Half Maximum



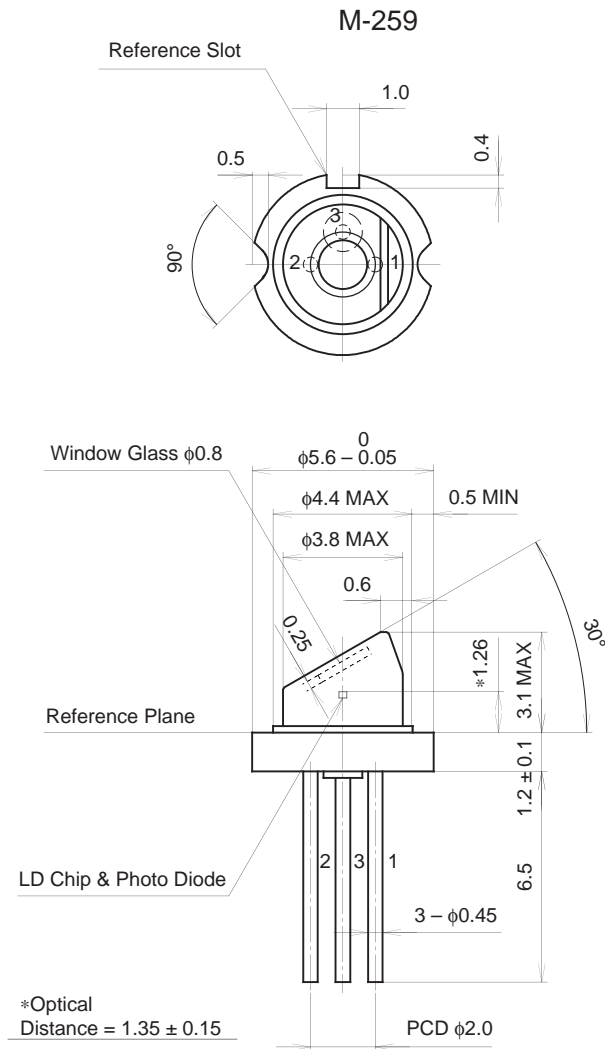
$$\Delta S_R = \frac{|S_L - S_R|}{S_L + S_R}$$

Example of Representative Characteristics



Package Outline

Unit: mm



SONY CODE	M-259
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.3g
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