SONY

SLD104AU

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 (ϕ5.6mm)

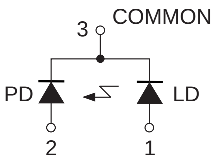
Structure

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

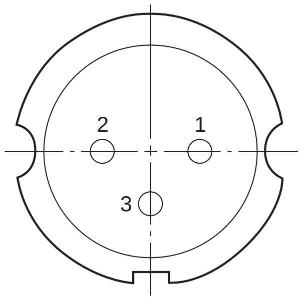
Absolute Maximum Ratings (Tc = 25°C)

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

Connection Diagram



Pin Configuration



Bottom View

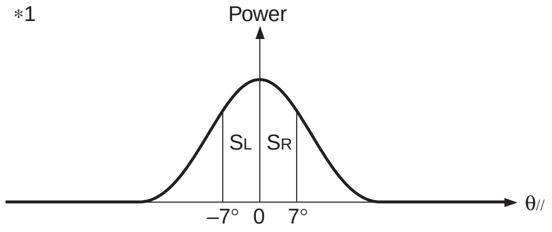
1. LD anode
2. PD anode
3. COMMON

Electrical and Optical Characteristics (Tc = 25°C) Tc: 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	$\theta\perp$	P_O = 3mW	20	32	45	degree
	Parallel	$\theta//$		9	17	25	degree
	Asymmetry	ΔS_R *1				20	%
Positional accuracy	Position	ΔX, ΔY, ΔZ	P_O = 3mW			±150	µm
	Angle	$\Delta\phi\perp$				±3	degree
Differential efficiency		η_D	P_O = 3mW	0.2	0.45	0.7	mW/mA
Astigmatism		A_S	P_O = 3mW $\lvert Z// - Z\perp \rvert$			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

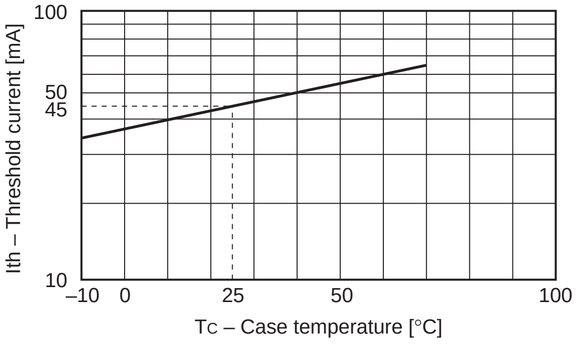
*1



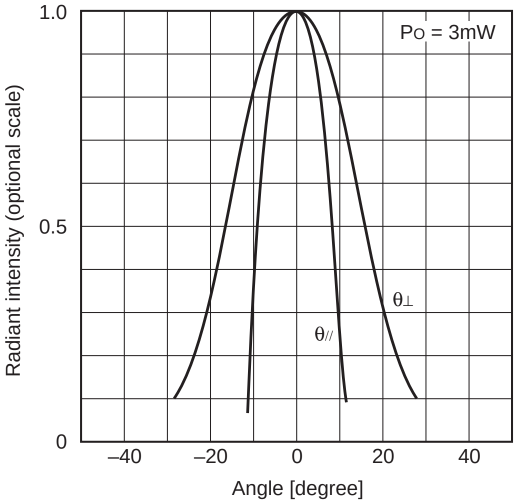
$$\Delta S_R = \frac{\lvert S_L - S_R \rvert}{S_L + S_R}$$

Example of Representative Characteristics

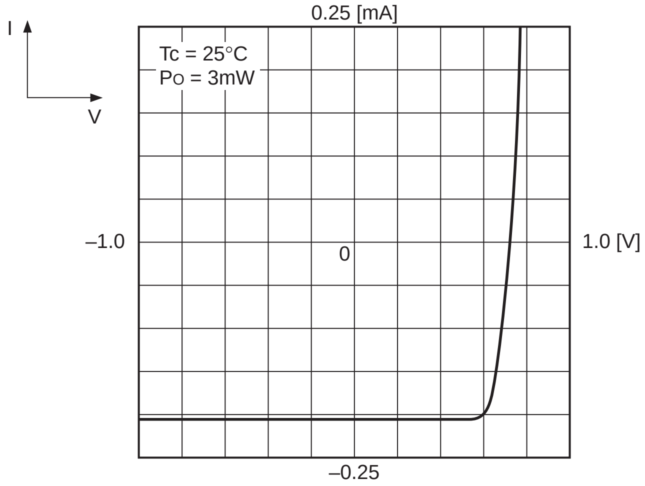
Temperature characteristic of threshold current



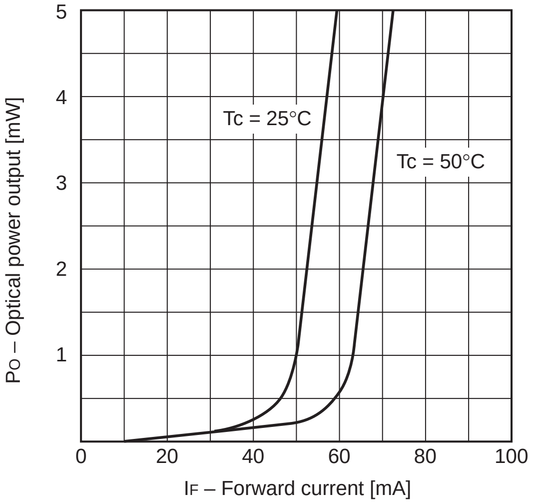
Far field pattern (FFP)



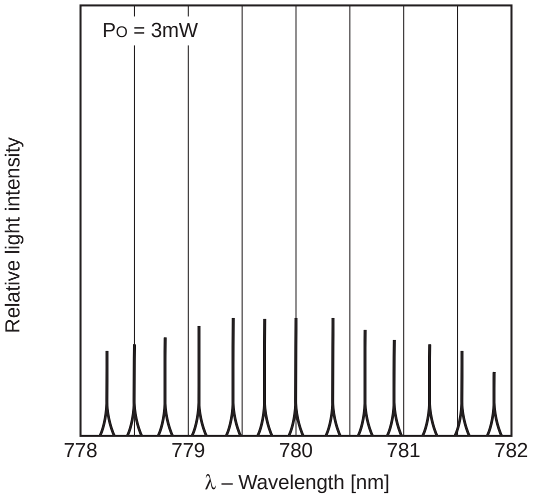
PIN diode current-voltage characteristics



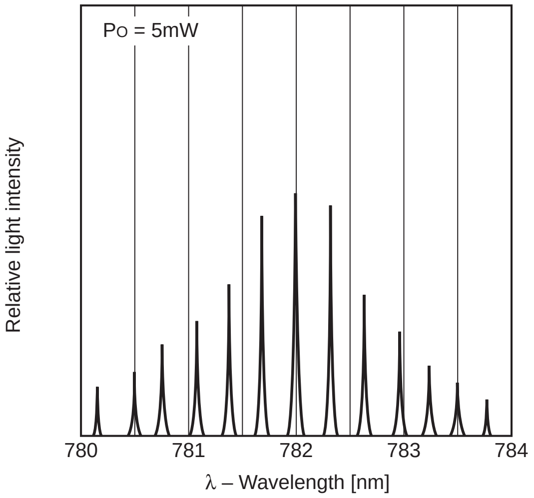
Optical power output vs. Forward current characteristics



Relative light intensity vs. Waveform characteristics

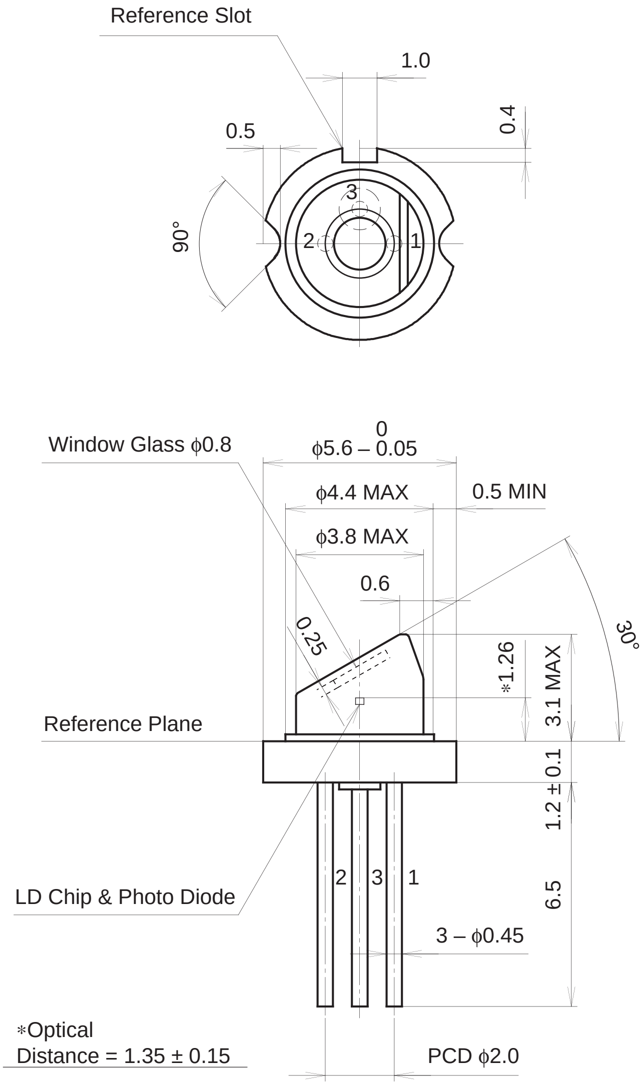


Relative light intensity vs. Wavelength characteristics



Package Outline Unit: mm

M-259



SONY CODE	M-259
EIAJ CODE	————
JEDEC CODE	————

PACKAGE WEIGHT	0.3g