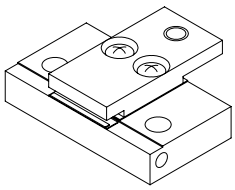
SONY

SLD431S

20W Array Laser Diode

M-S006



Description

The SLD431S is a high power laser diode with an array structure, which achieves 20W high power.

Features

- High power
  Recommended optical power output: Po = 20W
- Array structure
- Open package

Applications

Solid state laser excitation

Structure

GaAlAs quantum well structure laser diode

Absolute Maximum Ratings (Tc = 25°C)

• Optical power output	Pomax	22	W
• Reverse voltage	V_R LD	2	V

Operating Lifetime

MTTF 10,000H (effective value) at Po = 20W, Tc = 25°C

Warranty

This warranty period shall be 90 days after receipt of the product or 1,000 hours operation time whichever is shoter.

Sony Quality Assurance Department shall analyze any product that fails during said warranty period, and if the analysis results show that the product failed due to material or manufacturing defects on the part of Sony, the product shall be replaced free of charge.

Laser diodes naturally have differing lifetimes which follow a Weibull distribution.

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.

E02306A34

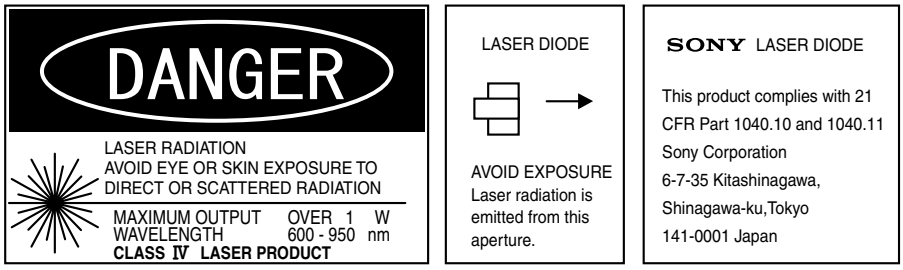
Electrical and Optical Characteristics (Tc = 25°C, Tc: case temperature)

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current		Ith		—	6	15	A
Operating current		Iop	Po = 20W	—	25	30	A
Operating voltage		Vop	Po = 20W	—	1.9	2.5	V
Wavelength		λp	Po = 20W	805	—	811	nm
Wavelength spectrum width		λw	Po = 20W (FWHM)	—	—	3.0	nm
Radiation angle	Perpendicular	θ⊥	Po = 20W	15	24	35	degree
	Parallel	θ//		5	8	15	degree
Positional accuracy	Position	ΔX, ΔY		—	—	±300	μm
	Angle	Δϕ⊥	Po = 20W	—	—	±5	degree
		Δϕ//		—	—	±4	degree
Differential efficiency		ηD	Po = 20W	0.5	1.0	1.5	W/A

Notes on Operation

Care should be taken for the following points when using this product.

(1) This product corresponds to a Class 4 product under IEC60825-1 and JIS standard C6802 "Laser Product Emission Safety Standards".



(2) Eye protection against laser beams

Take care not to allow laser beams to enter your eyes under any circumstances.

For observing laser beams, ALWAYS use safety goggles that block laser beams. Usage of IR scopes, IR cameras and fluorescent plates is also recommended for monitoring laser beams safely.

(3) Gallium Arsenide

This product uses gallium arsenide (GaAs). This is not a problem for normal use, but GaAs vapors may be potentially hazardous to the human body. Therefore, never crush, heat to the maximum storage temperature or higher, or place the product in your mouth.

In addition, the following disposal methods are recommended when disposing of this product.

1. Engaging the services of a contractor certified in the collection, transport and intermediate treatment of items containing arsenic.
2. Managing the product through to final disposal as specially managed industrial waste which is handled separately from general industrial waste and household waste.

(4) Prevention of surge current and electrostatic discharge

Laser diodes are most sensitive to electrostatic discharge among semiconductors. When a large current is passed through the laser diode for even an extremely short time, the strong light emitted from the laser diode promotes deterioration and then destruction of the laser diode. Therefore, note that surge current should not flow to the laser diode driving circuit from switches and others. Also, if the laser diode is handled carelessly, it may be destroyed instantly because electrostatic discharge is easily applied by a human body. Therefore, be extremely careful about overcurrent and electrostatic discharge.

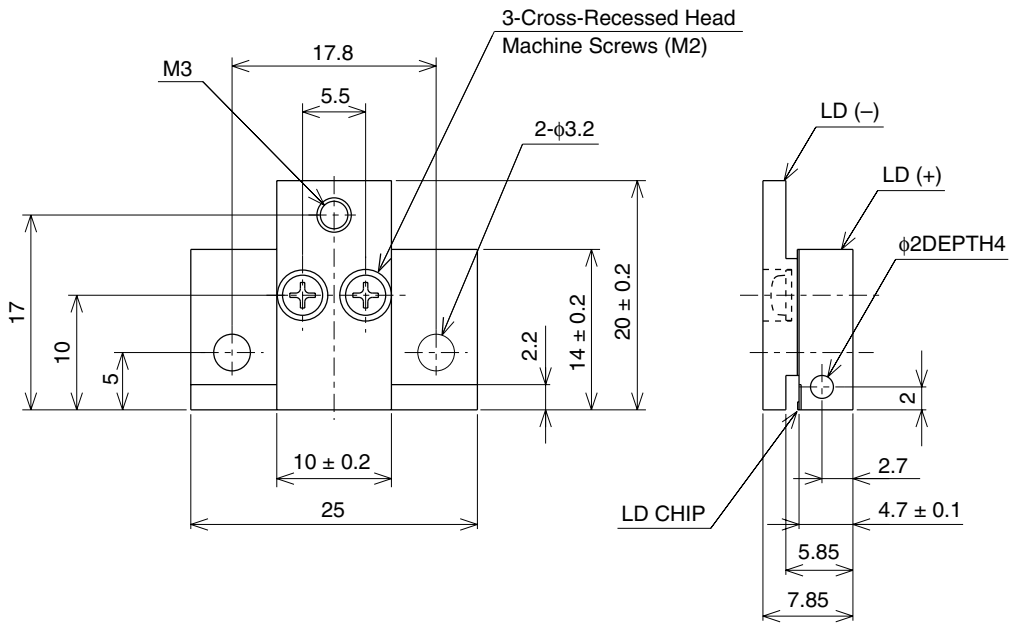
(5) Use for special applications

This product is not designed or manufactured for use in equipment used under circumstances where failure may pose a risk to life and limb, or result in significant material damage, etc.

Consult your Sony sales representative when investigating use for medical, vehicle, nuclear power control or other special applications. Also, use the power supply that was designed not to exceed the optical power output specified at the absolute maximum ratings.

Package Outline Unit: mm

M-S006



SONY CODE	M-S006
EIAJ CODE	————
JEDEC CODE	————

PACKAGE MASS	18.36g