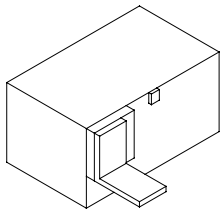
SONY

SLD302B

Block-type 200mW High Power Laser Diode

M-261



Description

The SLD302B is a high power laser diode mounted on a $3 \times 3 \times 5$mm Copper block.

It is ideal for applications which require a minimal distance between the laser facet and external optical parts.

Features

- Compact size $3 \times 3 \times 5$mm block
- High power output Po = 200mW
- Hole for thermistor

Applications

- Solid state laser excitation
- Medical use

Structure

GaAlAs double hetero-type laser diode

Operating Lifetime

MTTF 10,000H (effective value) at Po = 180mW, Tc= 25°C

Absolute Maximum Ratings (Tc = 25°C)

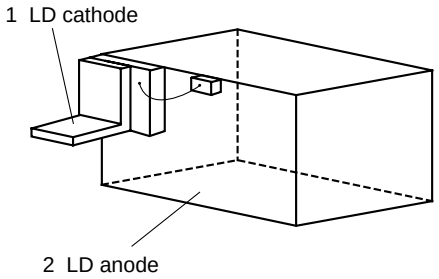
• Optical power output	Pomax	200	mW
• Recommended optical power output	Po	180	mW
• Reverse voltage	V_R LD	2	V
• Operating temperature	Topr	–10 to +50	°C
• Storage temperature	Tstg	–40 to +85	°C

Warranty

Reliability assurance does not apply to this product.

Pin Configuration

No.	Function
1	LD cathode
2	LD anode



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.

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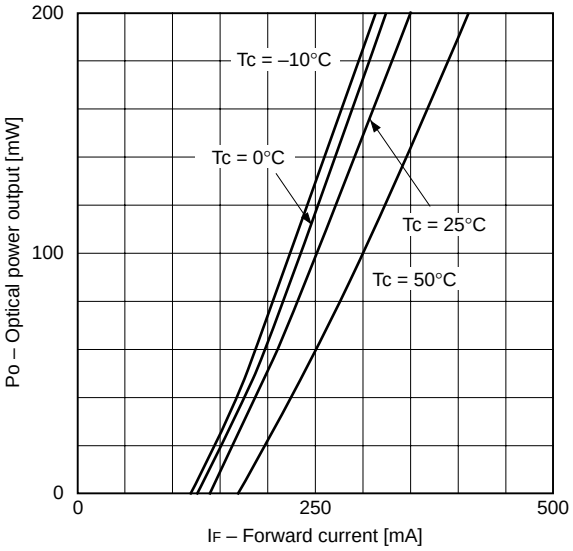
Electrical and Optical Characteristics (Tc = 25°C)

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current		Ith			150	200	mA
Operating current		Iop	P_O = 180mW		350	500	mA
Operating voltage		Vop	P_O = 180mW		1.9	3.0	V
Wavelength		λp	P_O = 180mW	770		840	nm
Radiation angle (F. W. H. M.*)	Perpendicular to junction	$\theta\perp$	P_O = 180mW		28	40	degree
	Parallel to junction	θ//			12	17	
Positional accuracy	Position	ΔX	P_O = 180mW			±300	µm
		ΔY, ΔZ				±100	
	Angle	$\Delta\phi\perp$				±3	degree
Differential efficiency		η_D	P_O = 180mW	0.5	0.8		mW/mA

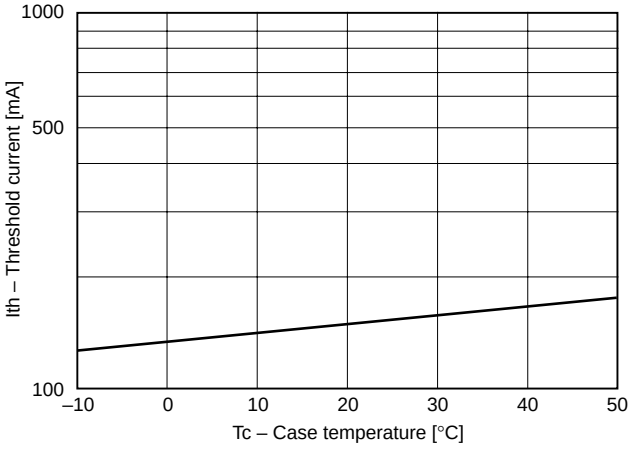
* F. W. H. M. : Full Width at Half Maximum

Example of Representative Characteristics

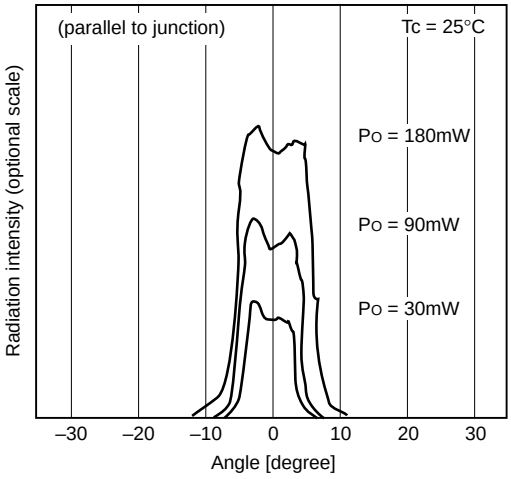
Optical power output vs. Forward current



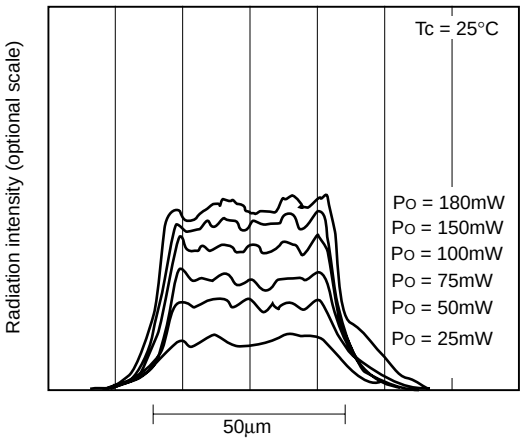
Threshold current vs. Temperature characteristics



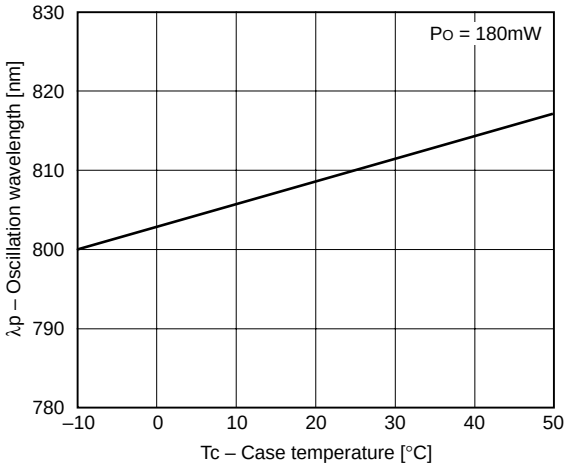
Power dependence of far field pattern



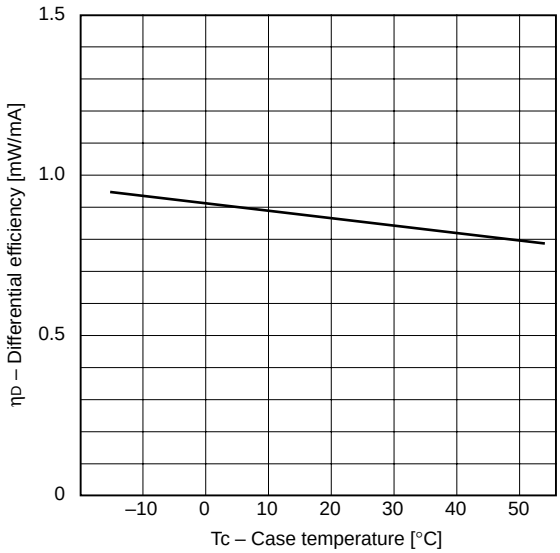
Power depecdence of near field pattern



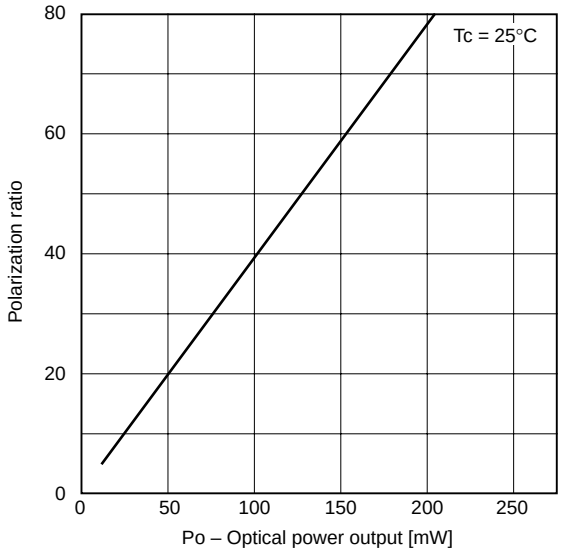
Oscillation wavelength vs. Temperature characteristics



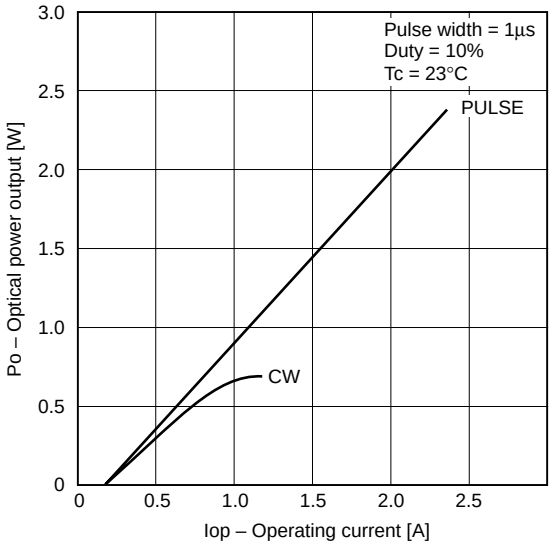
Differential efficiency vs. Temperature characteristics



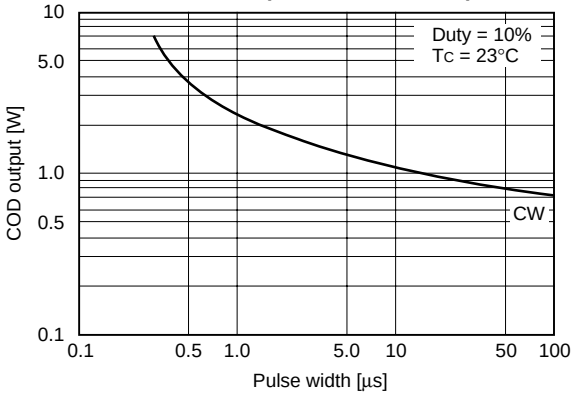
Power dependence of polarization ratio



Optical power output vs. Operating current

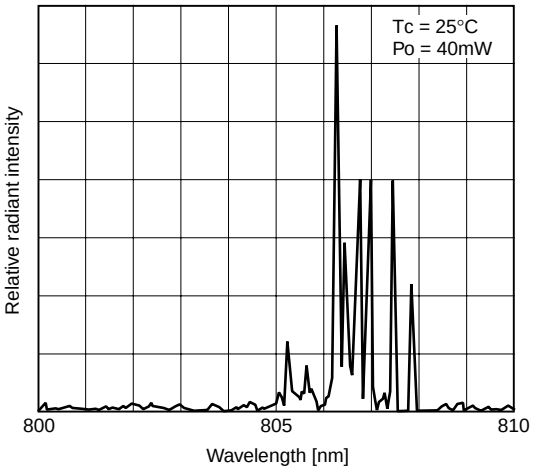


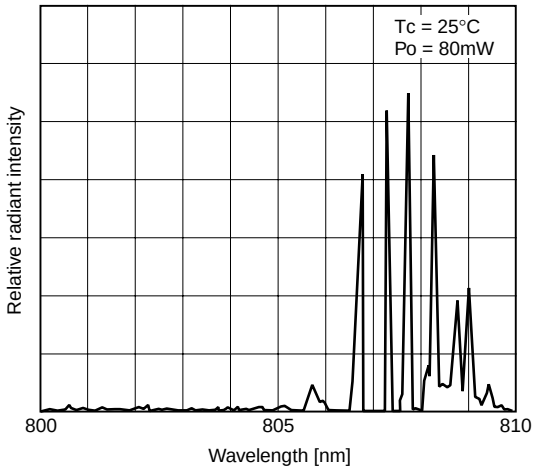
Pulse width dependence of COD* power

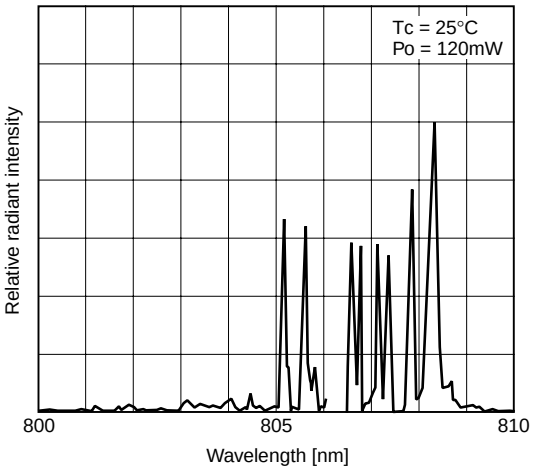


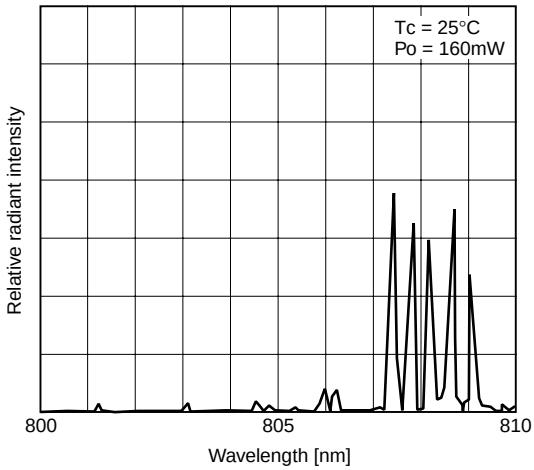
* COD (Catastrophic Optical Damage)

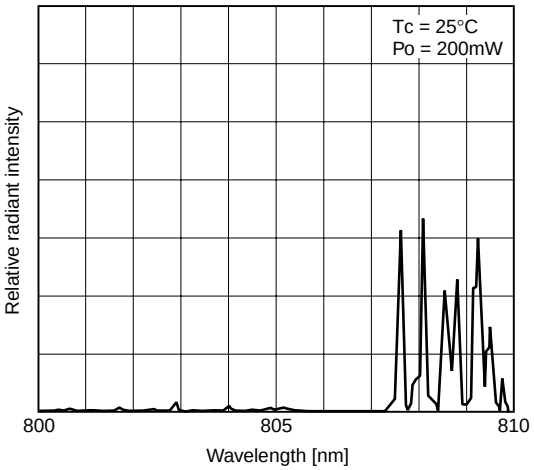
Power Dependence of Wavelength



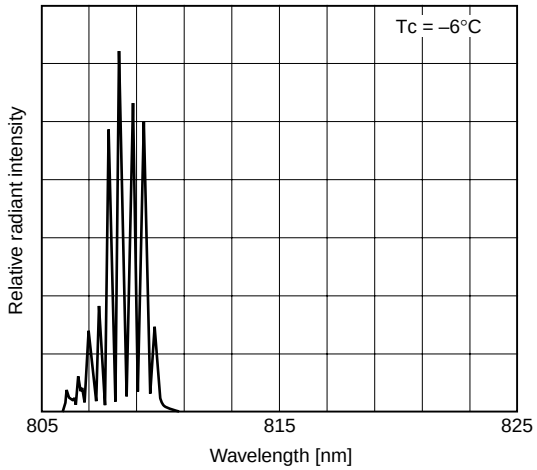


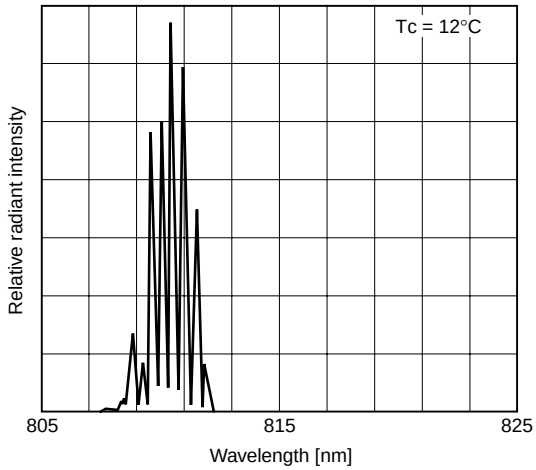


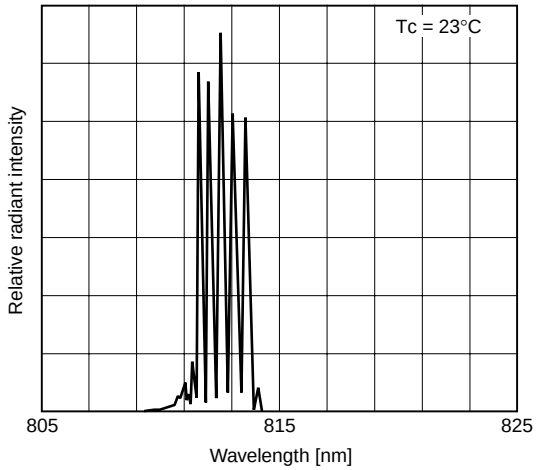


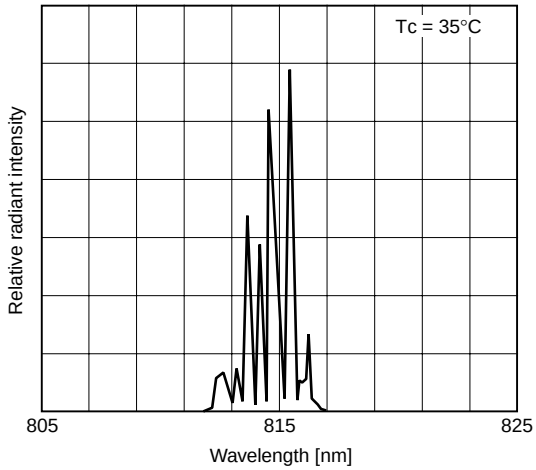


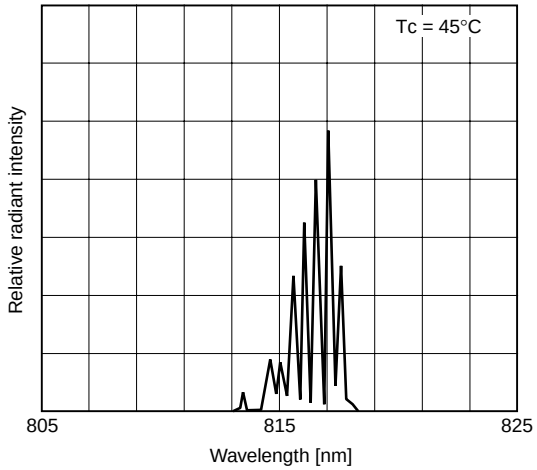
Temperature Dependence of Wavelength (P_O = 180mW)







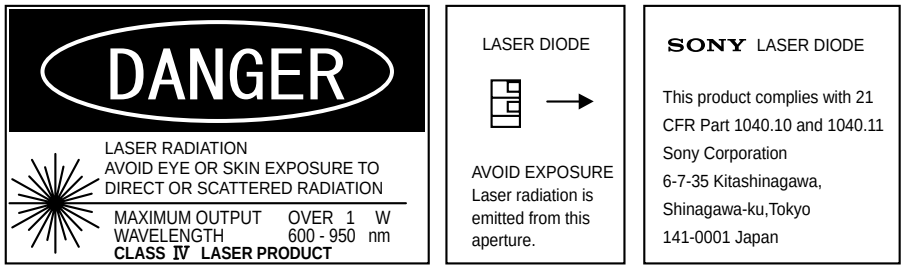




Notes on Operation

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.

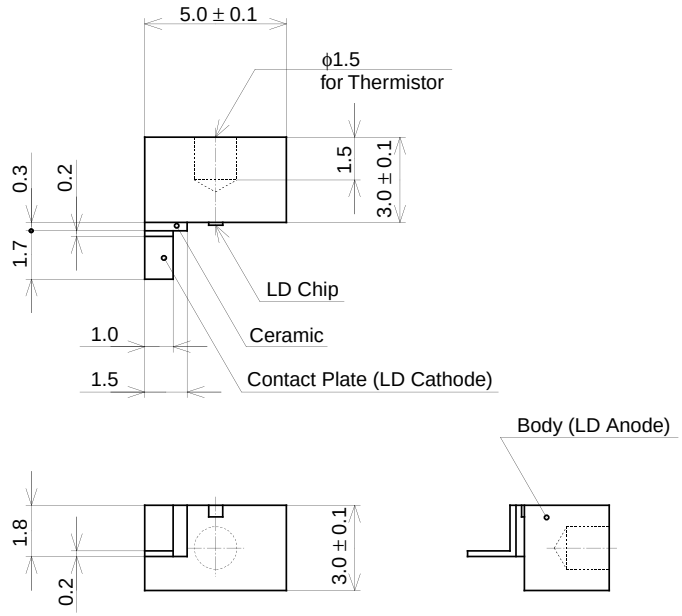
(5) Use for special applications

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-261



SONY CODE	M-261
EIAJ CODE	————————
JEDEC CODE	————————

PACKAGE STRUCTURE

PACKAGE MASS	1g