

Block-type 500mW High Power Laser Diode

Description

SLD303B is a high power laser diode mounted on a 3 × 3 × 5mm Copper block. It is ideal for applications which require a minimal distance between the laser facet and external optical parts.

Features

- Compact size 3 × 3 × 5mm block
- High power output  $P_o = 500\text{mW}$
- Hole for thermistor

Application

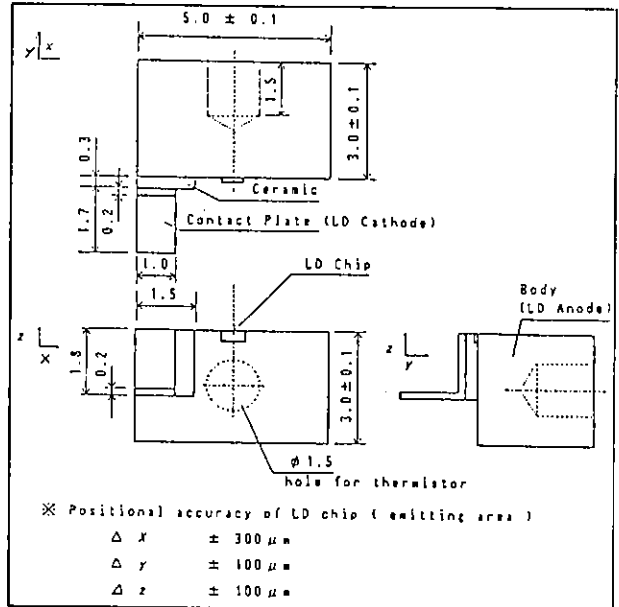
- Solid state laser excitation
- Medical use

Structure

GaAlAs double hetero-type laser diode

Package Outline

Unit : mm

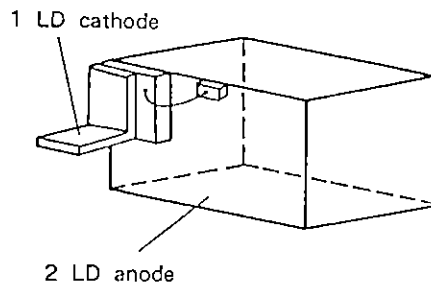


Absolute Maximum Ratings ( $T_c = 25^\circ\text{C}$ )

• Radiant power output	$P_o$	500	mW
• Recommended radiant power output	$P_o$	450	mW
• Reverse voltage	$V_R$ LD	2	V
• Operating temperature	$T_{opr}$	-10 to +30	$^\circ\text{C}$
• Storage temperature	$T_{stg}$	-40 to +85	$^\circ\text{C}$

Pin Configuration

No.	Function
1	LD cathode
2	LD anode

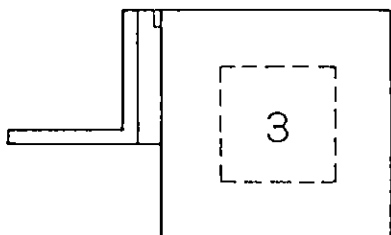


Electrical Characteristics (T<sub>c</sub> = 25 °C)

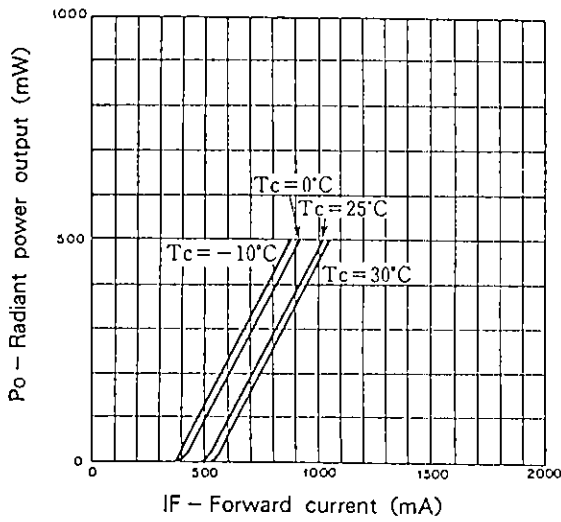
Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current		I <sub>th</sub>			450	600	mA
Operating current		I <sub>op</sub>	P <sub>o</sub> = 450mW		1100	1500	mA
Operating voltage		V <sub>op</sub>	P <sub>o</sub> = 450mW		1.9	3.0	V
Wavelength		λ <sub>p</sub>	P <sub>o</sub> = 450mW	770		840	nm
Radiation angle (FWHM*)	Perpendicular to junction	θ <sub>⊥</sub>	P <sub>o</sub> = 450mW		28	40	Degree
	Parallel to junction	θ <sub>∥</sub>			12	17	
Positional accuracy	Position	ΔX	P <sub>o</sub> = 450mW			± 300	μm
		ΔY, ΔZ				± 100	
	Angle	Δφ <sub>⊥</sub>					± 3
Slope efficiency		η <sub>D</sub>	P <sub>o</sub> = 450mW	0.5	0.8		mW/mA

\*FWHM : Full Width at Half Maximum

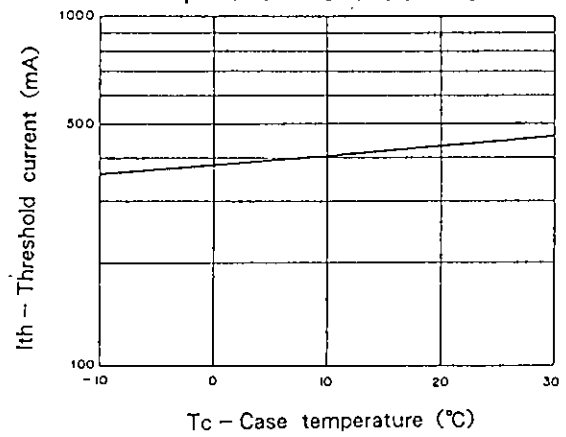
## Mark



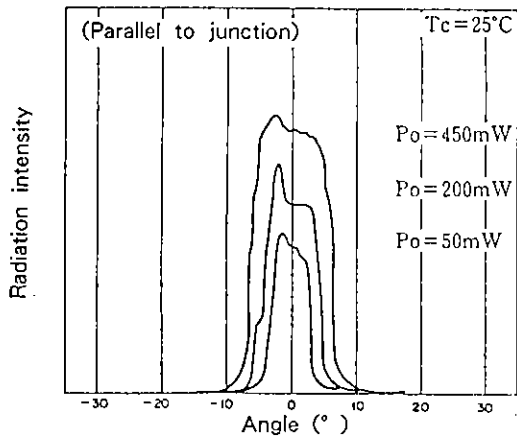
Radiant power output vs. Forward current



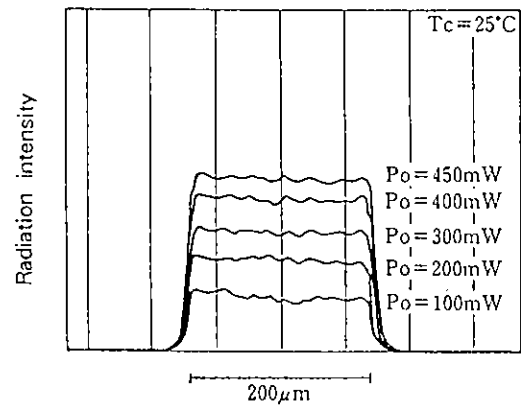
Threshold current vs. Temperature characteristics



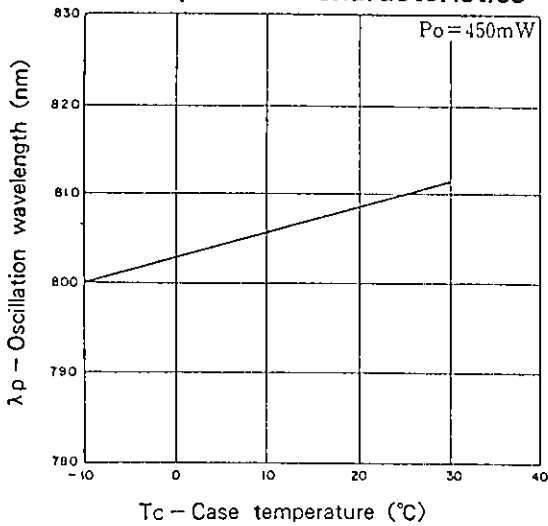
Power dependence of far field pattern



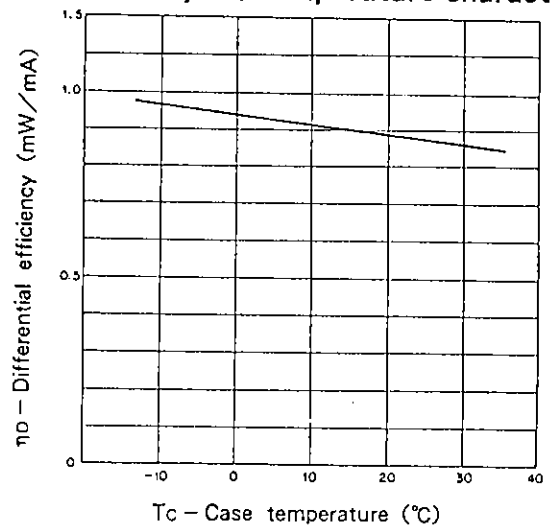
Power dependence of near field pattern



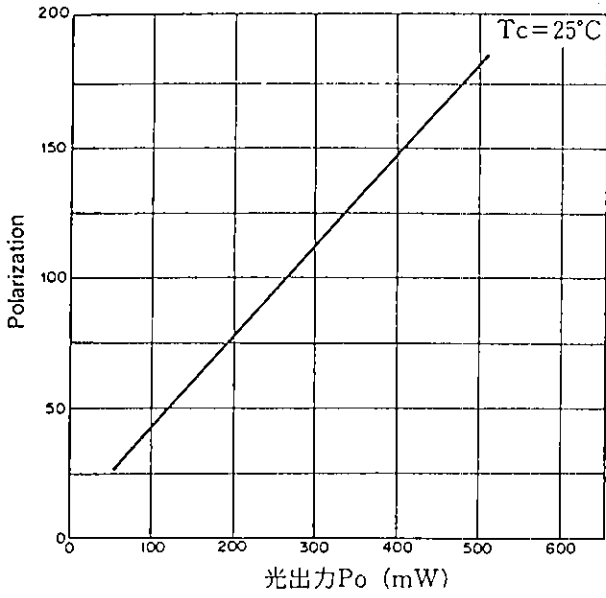
Oscillation wavelength vs. Temperature characteristics



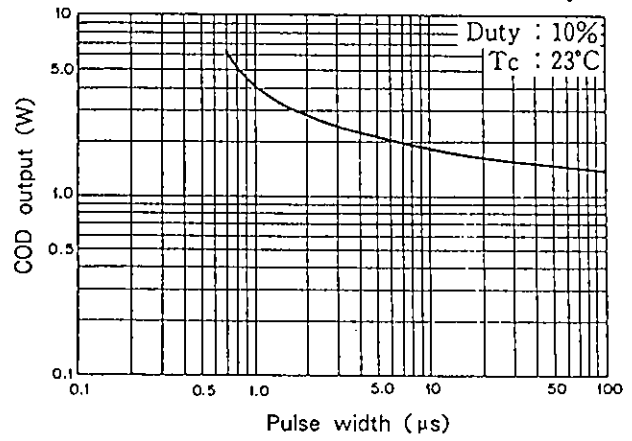
Slope efficiency vs. Temperature characteristics



Power dependence of polarization ratio

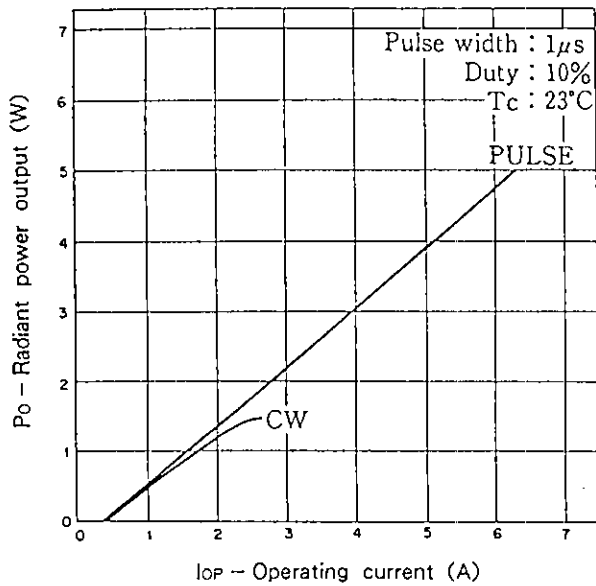


Pulse width dependence of COD\* power

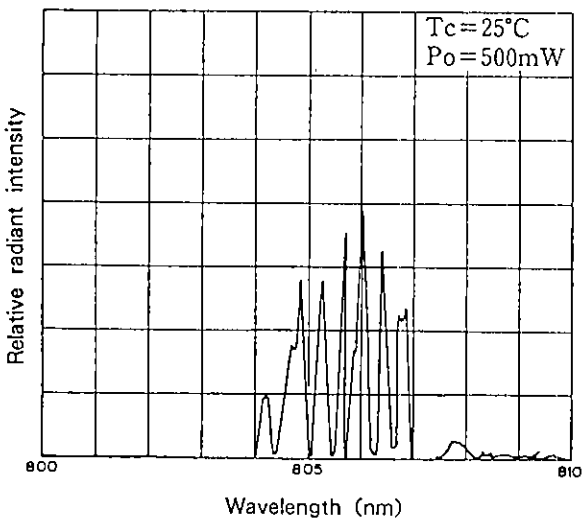
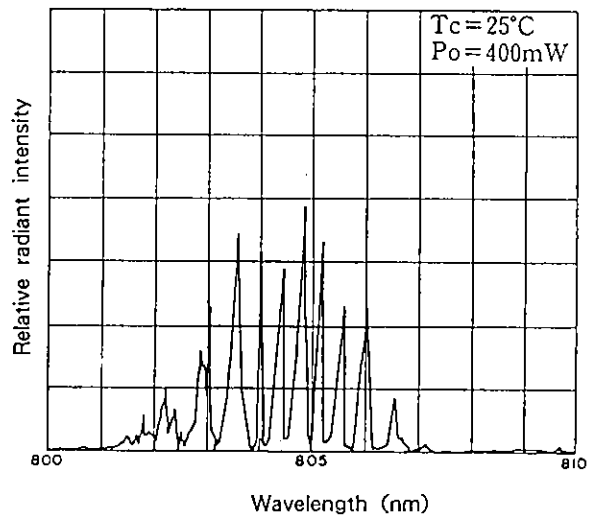
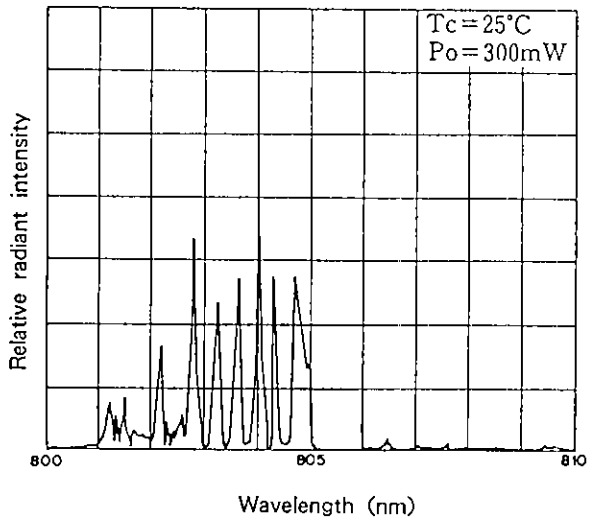
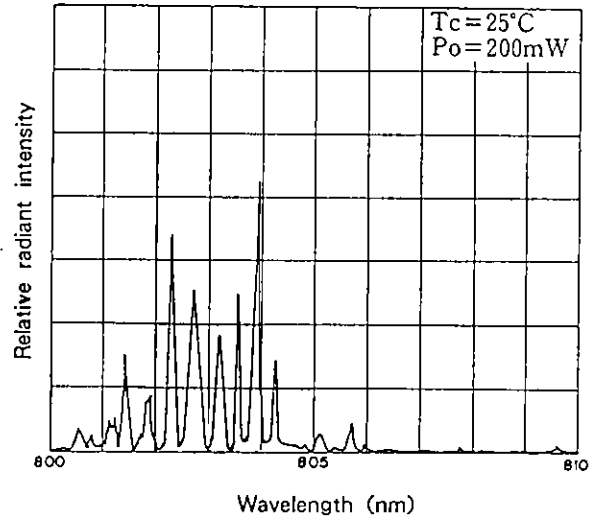
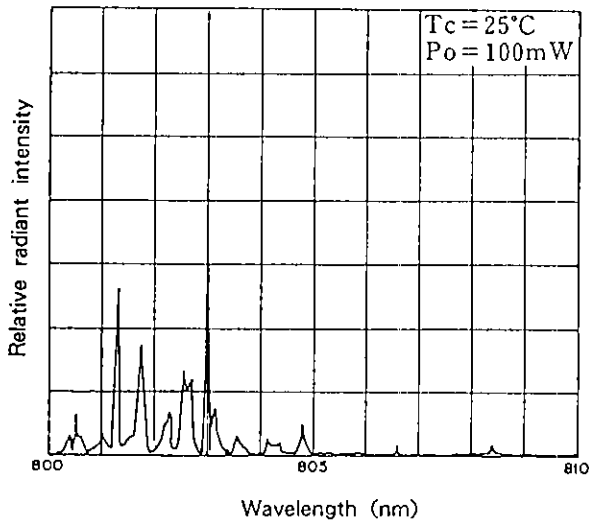


\*COD (Catastrophic Optical Damage)

Radiant power output vs. Operating current



Power Dependence of Wavelength



Temperature Dependence of Wavelength ( $P_0 = 90\text{mW}$ )

