ROITHNER LASERTECHNIK GmbH
WIEDNER HAUPTSTRASSE 76 1040 VIENNA AUSTRIA
TEL. +43 1 586 52 43 -0, FAX. -44 OFFICE@ROITHNER-LASER.COM

NLD453500G

- **Blue Light Emission Source**
- **450 nm, 3.5 W**
- **Multi-Mode**
- **RoHS Compliant**
- **without Photodiode**

RoHS COMPLIANT

Description

NLD453500G is a blue multi-mode laser diode, typically emitting at 450 nm, with rated output power of 3.5 W. **NLD453500G** comes in 9mm TO-Can package without monitor diode, and is RoHS compliant

Maximum Rating (T_{CASE} = 25°C)

Parameter	Symbol	Values Min.	Values Max.	Unit
Forward Current *(T_A=25°C)*	I_F		2.8	A
Allowable Reverse Current	I_R		100	mA
Storage Temperature	T_{STG}	- 20	+ 80	°C
Operating Case Temperature	T_C	0	+ 50	°C

Electro-Optical Characteristics (T_{CASE} = 25°C, I_F = 2.3 A)

Parameter		Symbol	Values Min.	Values Typ.	Values Max.	Unit
Dominant Wavelength		**λ_P**	**440**	**450**	**455**	**nm**
Radiated Power		P_O			3.5	W
Forward Voltage		V_F		4.5	5.0	V
Threshold Current		I_{TH}		300		mA
Slope Efficiency		η		1.6		W/A
Beam Divergence	Parallel	$\Theta_{\parallel}$	8	15	22	deg.
	Perpendicular	$\Theta_{\perp}$	37	45	53	deg.
Beam Pointing Accuracy	Perpendicular	$\Delta\Theta_{\perp}$	- 3		3	deg.

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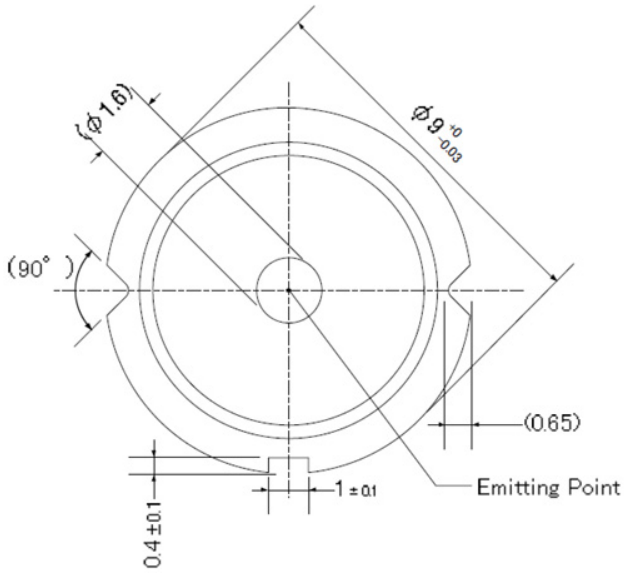
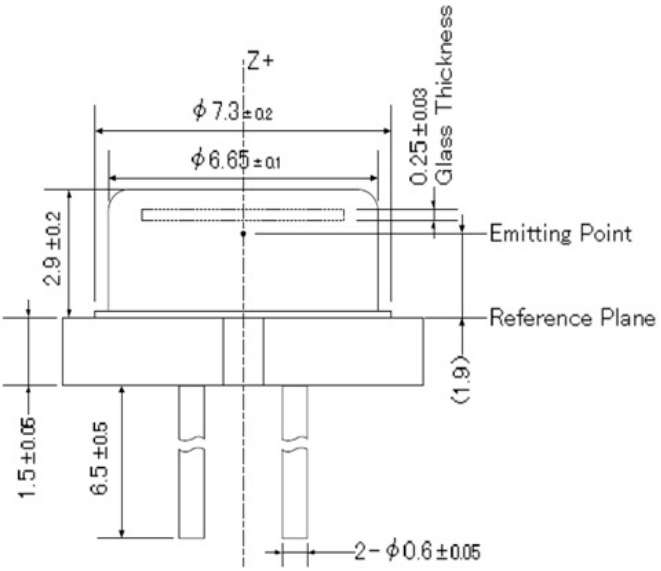
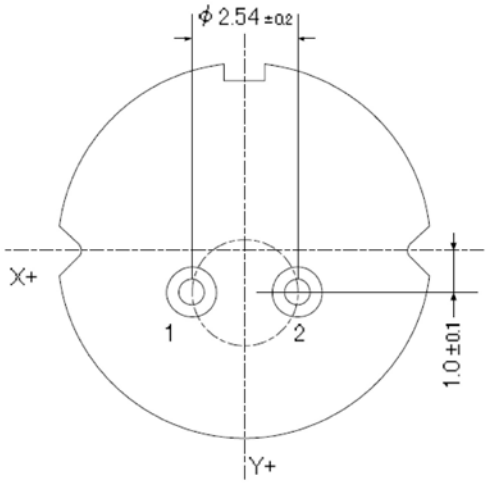
Outline Dimensions

9mm TO-Can





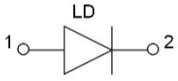
Bottom View:



All dimensions in mm

Electrical Layout

Pin #	Function
Pin 1	LD Anode
Pin 2	LD Cathode



Precautions

Static Electricity:

Laser diodes are sensitive to electrostatic discharge (ESD). Precautions against ESD must be taken when handling or operating these diodes. Surge voltage or electrostatic discharge can result in complete failure of the device.

Safety of Laser light:

During operation this laser diode does emit **highly concentrated blue light**, which is **hazardous to human skin and eyes**. Skin and Eyes must not be exposed to direct or indirect laser light at any time. **Protective safety glasses are recommended**.

This laser diode is classified **Class 4 according to IEC60825-1 and 21 Part 1040.10 Safety Standards**. It is advised to attach a warning label on products/systems that do utilize this laser diode:

Operation:

Do *only* operate this laser diode with a current source.
Running these laser diode from a voltage source *will* result in complete failure of the device.
Current of a laser diode is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.
Laser diode must be cooled !!