



NLD521000G

- Green Laser Diode
- 520 nm, 1 W, MM
- 9.0 mm TO Package
- ESD Protection Device



Description



NLD521000G is a green **multi transverse mode** laser diode, based on InAlGaN structure, typically emitting at 520 nm, with an output power of 1 W, and max. allowed operating temperature of 60°C. **NLD521000G** comes in 9.0 mm TO-Can package, with integrated Zener Diode (ESD protection device).

Maximum Ratings*

Parameter	Symbol	Values		Unit
		Min.	Max.	
Forward Current	I_{FMAX}		1.8	A
Operating Temperature	T_{OPR}	0	+ 60	°C
Storage Temperature	T_{STG}	- 40	+ 85	°C
LD Reverse Current	I_R		85	mA
Soldering Temperature ($t_{max} = 3$ s)	T_{SOL}		+ 265	°C

* Operating close to or outside these conditions may damage the device

Electro-Optical Characteristics ($T_{CASE} = 25^\circ\text{C}$)

Parameter	Symbol	Values			Unit	
		Min.	Typ.	Max.		
Peak Wavelength	λ_P	515	520	525	nm	
Optical Output Power (CW)	P_O	0.7	1.0		W	
Emitter Size ($1/e^2$)			14 x 1		μm	
Operating Voltage	U_F		4.6	5.3	V	
Threshold Current	I_{th}		230	350	mA	
Operating Current	I_F		1.6		A	
Slope Efficiency	η_s		0.7	1.2	W/A	
Beam Divergence ($1/e^2$)	parallel	$\theta_{ }$	5	11	25	deg.
	perpendicular	θ_{\perp}	35	46	55	deg.
Chip Positioning Accuracy	$\Delta X, \Delta Y$	- 80		+ 80	μm	
Beam Angle Deviance	parallel	$\Delta\theta_{ }$	-5		+5	deg.
	perpendicular	$\Delta\theta_{\perp}$	-5		+5	deg.

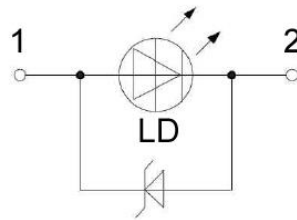




Electrical Connection

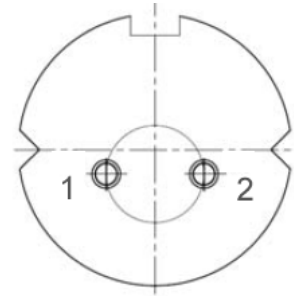
Pin Configuration

Pin #	Function
Pin 1	LD anode
Pin 2	LD cathode



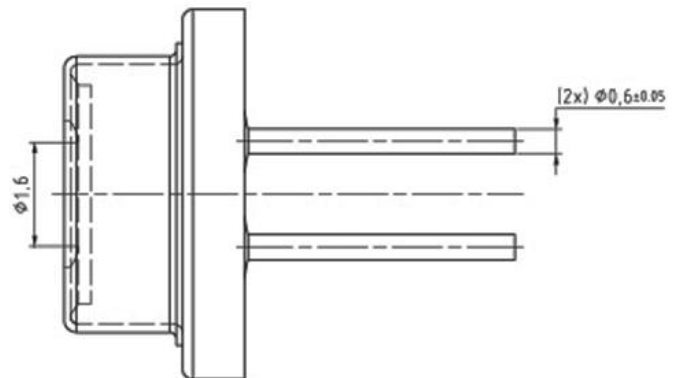
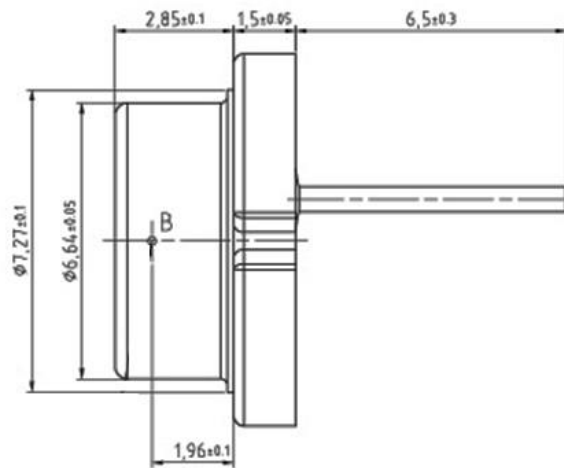
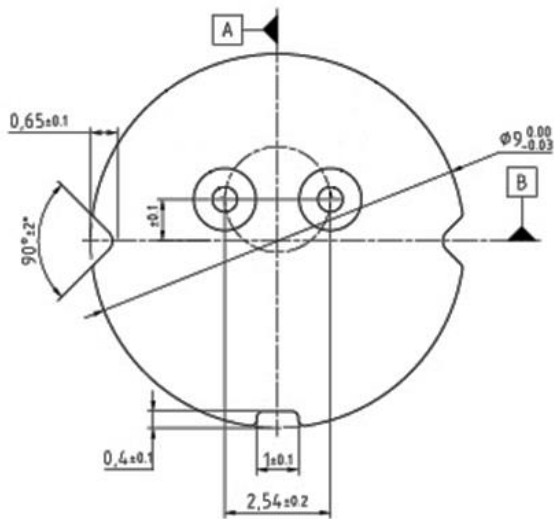
Zener diode

Bottom View



Outline Dimensions

9.0 mm TO-Can



All dimensions in mm



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Precautions

Safety

Caution: Laser light emitted from any laser diode may be **harmful to the human eye**. Avoid looking directly into the laser diode's aperture when the diode is in operation.

Note: The use of optical lenses with this laser diode will increase eye hazard

ESD caution

Always do handle laser diodes with extreme care to **prevent electrostatic discharge**, the primary cause of unexpected diode failure. To prevent ESD related failures, we do advise to always **wearing wrist straps**, and **grounding all applicable work surfaces**, when handling laser diodes.

Operating considerations

We do advise to operate this laser diode with a current source only. The current of a laser diode is an exponential function of the voltage across it. **Usage of current regulated drive circuits is mandatory**. Laser diodes may be damaged by excessive drive currents or switching transients

Proper heat sinking will greatly enhance stability and lifetime of the laser diode

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The above specifications are for reference purpose only and subjected to change without prior notice.