



LD-520-110SG

- Green Laser Diode
- 520 nm, 110 mW
- Single transverse mode
- TO38 package, Flat Window



Description

LD-520-110SG is a direct emitting, **GaN based**, 520 nm green laser diode in 3.8 mm TO-Can without monitor photodiode. It offers single transverse mode emission and >100 Mhz modulation bandwidth. It is an efficient radiation source for many applications like laser projection or biomedical application.

Maximum Rating*

Parameter	Symbol	Values		Unit
		Min.	Max.	
Operating Current*1	I_{MAX}		330	mA
Output Power*1	P_{MAX}		120	mW
Reverse Voltage	V_R		2	V
Reverse Current	I_R		10	μ A
Operating Temperature*1	T_{OPR}	- 20	+ 60	$^{\circ}$ C
Storage Temperature	T_{STG}	- 40	+ 85	$^{\circ}$ C
Soldering Temperature (max. 3s)	T_{SOL}		+ 260	$^{\circ}$ C
Junction Temperature*1	T_J		+ 120	$^{\circ}$ C

* operating outside these conditions may damage the device

*1 operating at or near maximum ratings may degrade reliability and life time

Electro-Optical Characteristics ($T_{CASE} = 25^{\circ}\text{C}$, $P_O = 110\text{ mW}$)

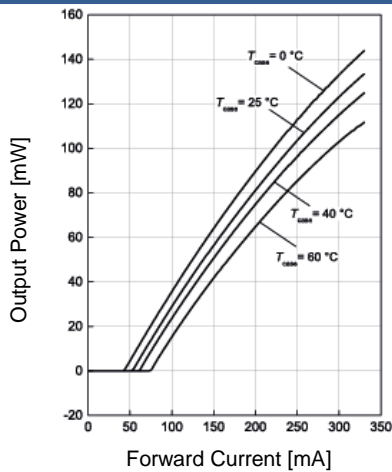
Parameter	Symbol	Values			Unit	
		Min.	Typ.	Max.		
Peak Wavelength	λ_P	515	520	530	Nm	
Spectral Width (FWHM)	$\Delta\lambda$		1		Nm	
Operating Voltage	V_F		6.1	7.5	V	
Threshold Current	I_{th}		40	90	mA	
Operating Current	I_F		225	300	mA	
Modulation Frequency	f	100			MHz	
Polarization (TE)	P_{TE}		100:1			
Beam Divergence (FWHM)	parallel	$\Theta_{ }$	5.5	7.0	8.5	deg.
	perpendicular	Θ_{\perp}	18	23	25	deg.
Thermal Resistance (junction to case)	R_{th}		38		K/W	



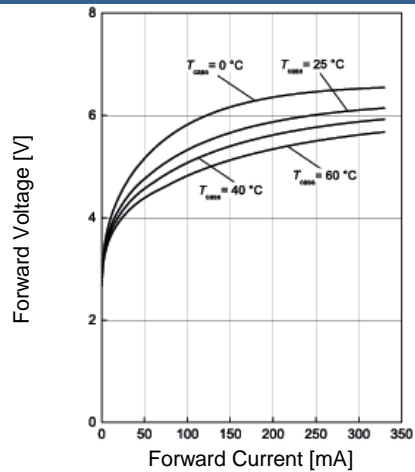


Typical Performance Curves

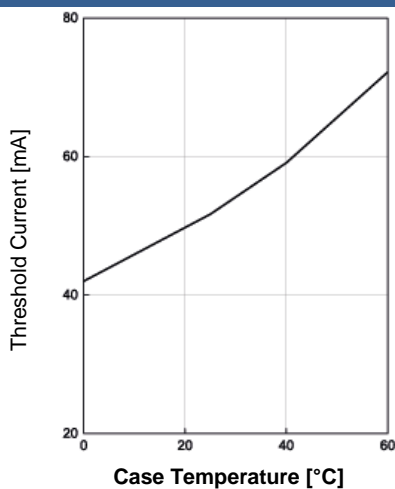
Output Power vs. Forward Current



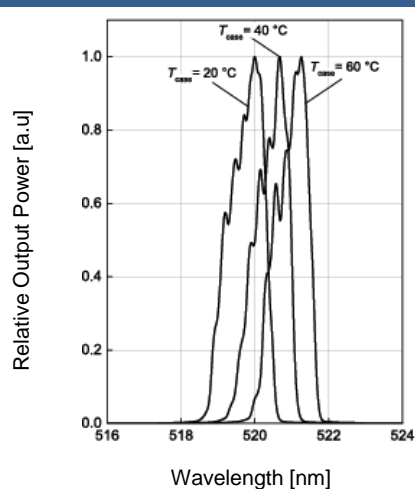
Forward Voltage vs. Forward Current



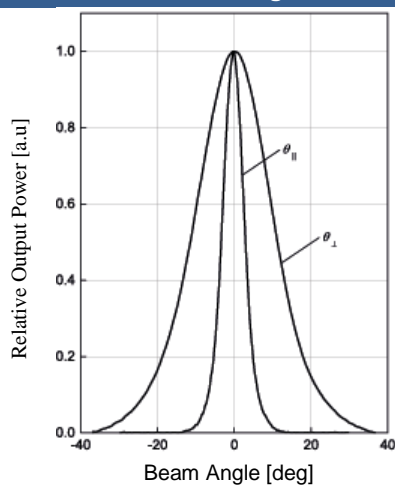
Threshold Current vs. Case Temperature



Relative Spectral Emission



Beam Divergence

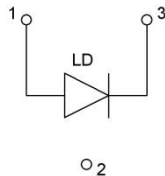




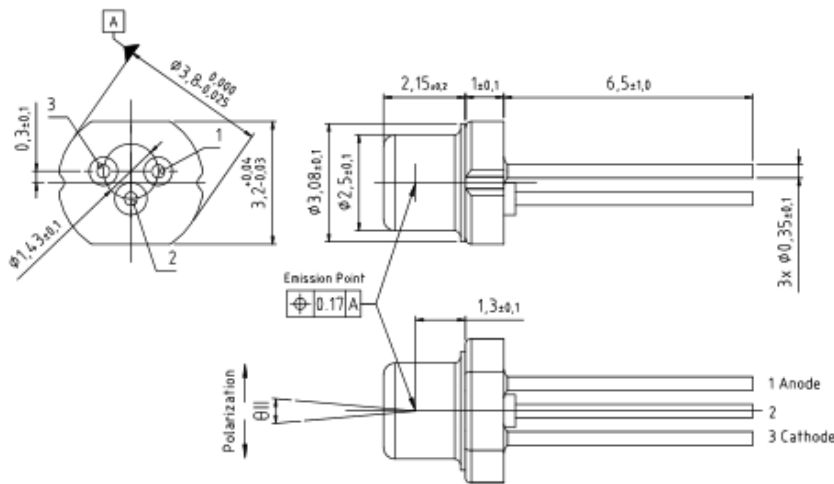
Electrical Connection

Pin Configuration

Pin #	Function
Pin 1	LD Anode
Pin 2	Case
Pin 3	LD Cathode



Outline Dimensions



All dimensions in mm

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, it is strongly advised to always **wearing wrist straps**, and **grounding all applicable work surfaces**, when handling laser diodes

Operating considerations

It is strongly advised to only operate this laser diode with a current source. 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