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

LD-520-30SG

- **Green Laser Diode**
- **520 nm, 30 mW**
- **Single transverse mode**
- **TO38 package, Flat Window**

RoHS COMPLIANT Pb Pb-Free

Description

LD-520-30SG 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}		200	mA
Output Power*[1]	P_{MAX}		50	mW
Reverse Voltage	V_R		2	V
Reverse Current	I_R		10	µA
Operating Temperature*[1]	T_{OPR}	- 20	+ 60	°C
Storage Temperature	T_{STG}	- 40	+ 85	°C
Soldering Temperature (max. 3s)	T_{SOL}		+ 260	°C
Junction Temperature*[1]	T_J		+ 120	°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°C, P_O = 30mW)

Parameter		Symbol	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength		**λ_P**	**510**	**520**	**530**	**nm**
Spectral Width (FWHM)		$\Delta\lambda$		2		nm
Operating Voltage		V_F		5.8	7.0	V
Threshold Current		I_{th}		30	65	mA
Operating Current		I_F		95	140	mA
Modulation Frequency		f	100			MHz
Polarization (TE)		P_{TE}		100:1		
Beam Divergence (FWHM)	parallel	$\Theta\parallel$	6	8	10	deg.
	perpendicular	$\Theta\perp$	19	22	25	deg.
Thermal Resistance (junction to case)		R_{th}		38		K/W

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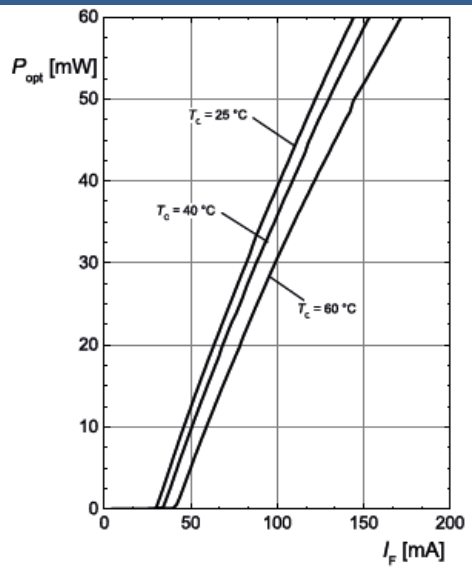
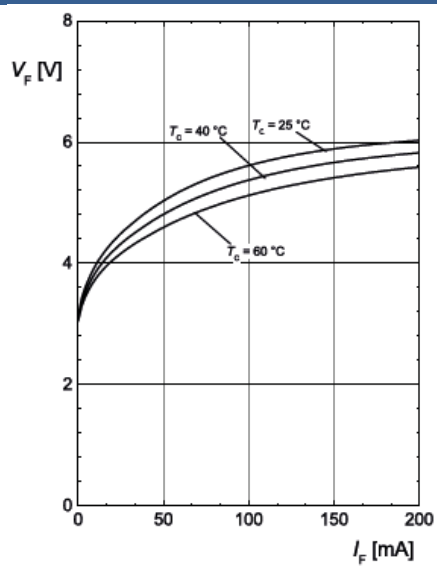
Performance Characteristics

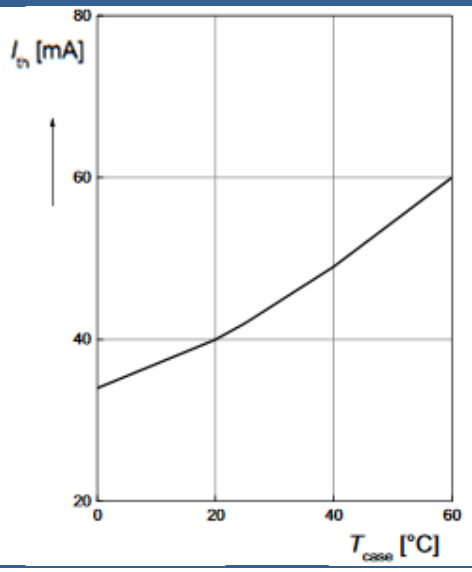
Optical Output Power vs. Operating Current



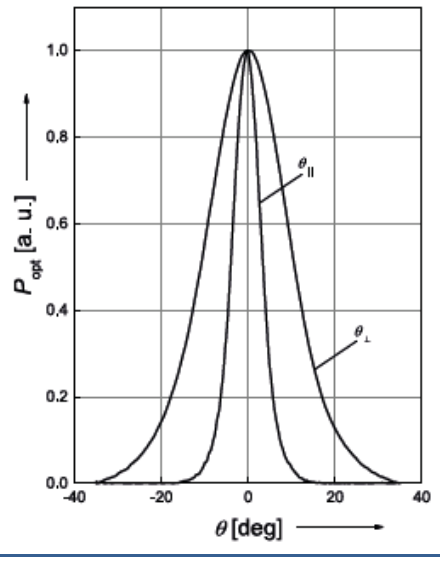
Operating Voltage vs. Operating Current



Threshold Current vs. Temperature



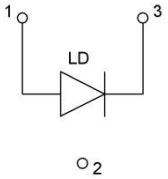
Beam Divergence



Electrical Connection

Pin Configuration

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



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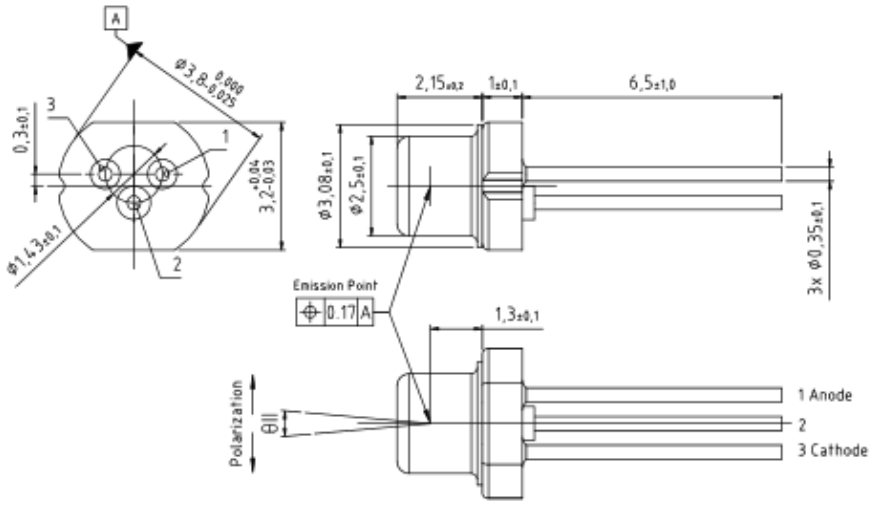
Outline Dimensions



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, we do advise to **wear wrist straps**, and to **ground 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

We do advise to operate the laser diode at the lowest temperature possible, and never exceed the maximum specifications as outlined in the datasheet. Device degradation will accelerate with increased temperature. **Proper heat sinking will greatly enhance stability and lifetime of the laser diode**