



ADL-52051SW

- Green APC Laser Diode
- **Automatic Power Control (APC)**
- 520 nm, 5 mW
- Modulation Bandwidth < 2 MHz
- Supply Voltage 6 VDC
- TO33 Package, Flat Window



Description

ADL-52051SW is a green laser diode, typically emitting at 520 nm with an output power of <5 mW, and modulation bandwidth of up to 2 Mhz (PWM). It features an **integrated automatic power control (APC) driver** and can be operated through a 6 VDC voltage source. **ADL-52051SW** comes in 3.3 mm TO-Can package with flat glass window.

Maximum Ratings*

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Supply Voltage	U_{CC}	5.8	7.0	V
Optical Output Power	P_O		5.0	mW
Operating Temperature*	T_{OPR}	- 10	+ 50	°C
Storage Temperature*	T_{STG}	- 40	+ 85	°C
Soldering Temperature (t_{max} 3s)	T_{SOL}		+ 260	°C

* operation close to or outside these parameters may damage the device

Electro-Optical Characteristics ($T_C = 25^\circ\text{C}$, $P_O = 5$ mW, $U_{CC} = 6$ V)

Parameter	Symbol	Values			Unit	
		Min.	Typ.	Max.		
Peak Wavelength	λ_P	510	520	530	nm	
Power Variation	ΔP_O	-10		+10	%	
Power/Temperature Variation (-10 ...50 °C)	ΔP_{OT}	-15		+10	%	
Power/Supply Voltage Variation (5.8...7.0 V)	ΔP_{OU}	-15		+10	%	
Current Draw	I_{CC}		50	80	mA	
Chip Positioning Accuracy	$\Delta X, \Delta Y, \Delta Z,$	-80		+80	μm	
Beam Divergence (FWHM)	parallel	$\Theta_{ }$	3	7	12	deg.
	perpendicular	Θ_{\perp}	15	23	30	deg.
Beam Deviation	parallel	$\Delta\Theta_{ }$	-5		+5	deg.
	perpendicular	$\Delta\Theta_{\perp}$	-5		+5	deg.
Bandwidth (PWM, duty cycle = 50%)	f_M	100		2000	kHz	

Safety Advice

Laser light emitted from any laser diode may be harmful to the human eye. **Avoid looking directly into the laser diode's aperture.** The use of optical lenses will increase eye hazard





ROITHNER LASERTECHNIK GmbH

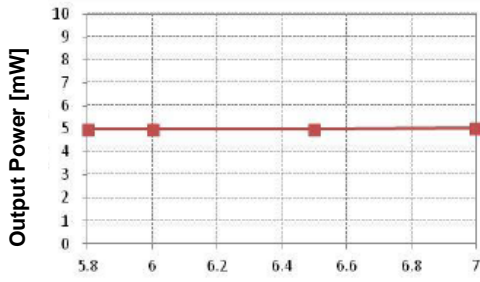
WIEDNER HAUPTSTRASSE 76
TEL. +43 1 586 52 43 -0. FAX. -44

1040 VIENNA AUSTRIA
OFFICE@ROITHNER-LASER.COM



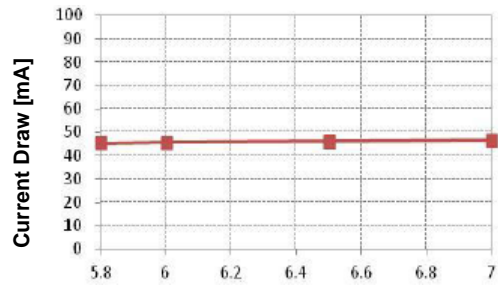
Typical Performance Curves

Output Power vs. Supply Voltage



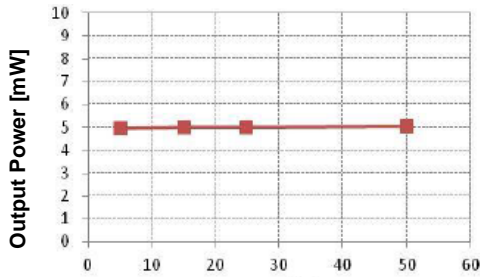
Supply Voltage [V]

Current Draw vs. Supply Voltage



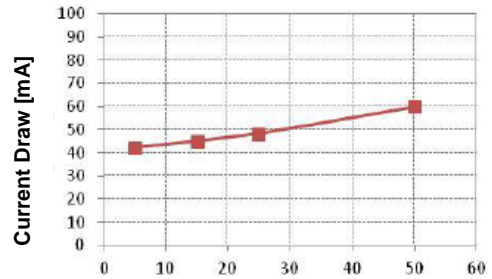
Supply Voltage [V]

Output Power vs. Temperature



Temperature [°C]

Current Draw vs. Temperature



Temperature [°C]



ROITHNER LASERTECHNIK GmbH

WIEDNER HAUPTSTRASSE 76
TEL. +43 1 586 52 43 -0. FAX. -44

1040 VIENNA
OFFICE@ROITHNER-LASER.COM

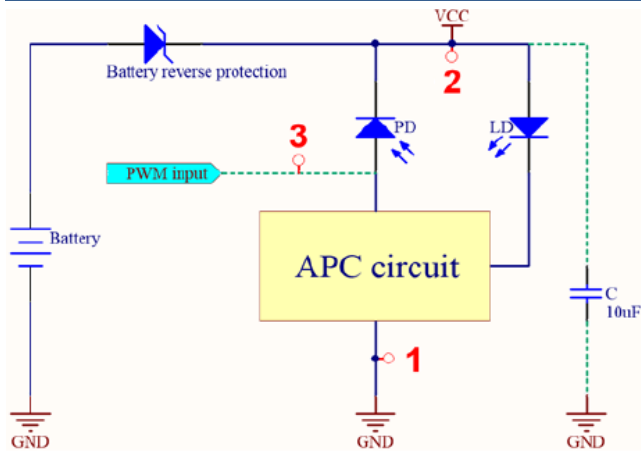
AUSTRIA



Electrical Connection

Pin Configuration		Bottom View	CW	PWM
Pin #	Function			
Pin 1	GND			
Pin 2	Vcc			
Pin 3	PWM			

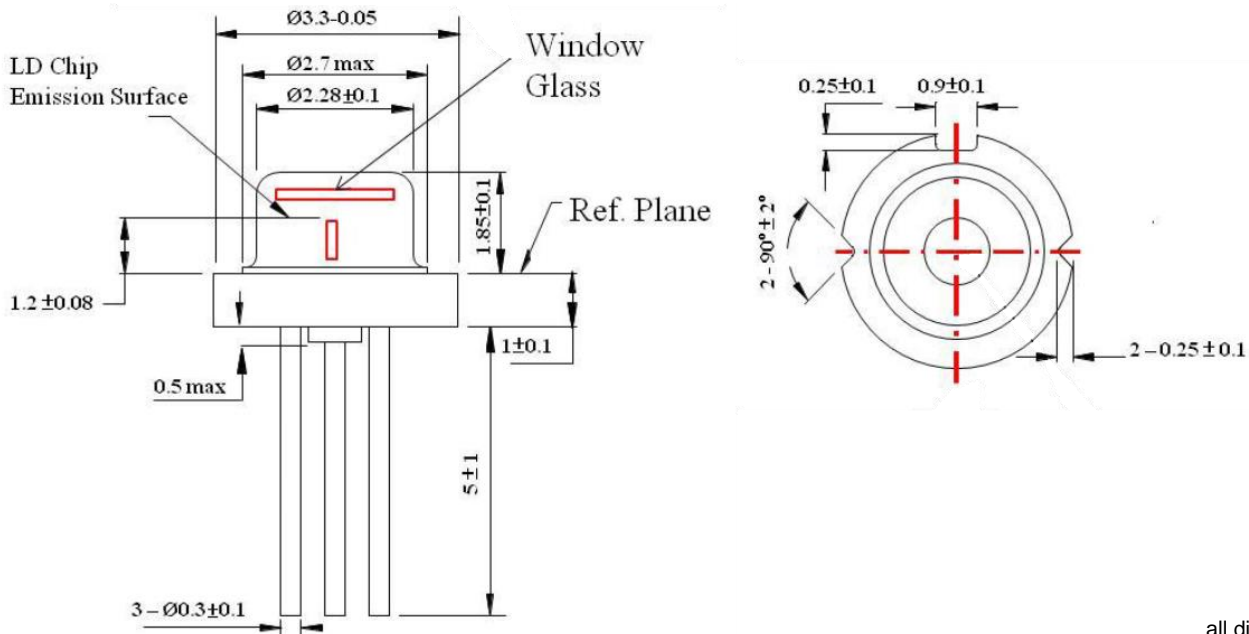
Schematics



- No external driver required
- APC driver IC integrated into the TO-Can
- 10 µF capacitor recommended for PWM operation
- Battery reverse protection recommended
- 1 µF capacitor recommended for low power operation (<50%)

Outline Dimensions

TO33



all dimensions in mm