



ADL-52101SW

- Green APC Laser Diode
- **Automatic Power Control (APC)**
- 520 nm, 10 mW
- Modulation Bandwidth < 2 MHz
- Supply Voltage 6 VDC
- TO33 Package, Flat Window



Description

ADL-52101SW is a green laser diode, typically emitting at 520 nm with an output power of 10 mW, and a 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-52101SW** 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}	6.0	7.0	V
Optical Output Power	P_O		10	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 ($T_C = 25^\circ\text{C}$, $P_O = 10\text{ mW}$, $U_{CC} = 6\text{V}$)

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}		70	100	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

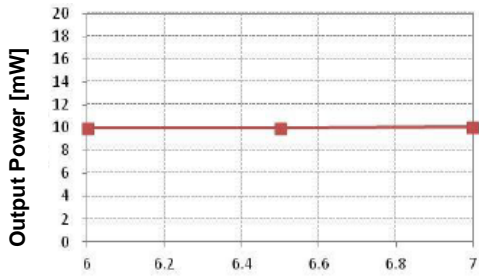
Laser light emitted from any laser diode may be harmful to the human eye. **Avoid looking directly into the laser diode's aperture.** The use of optical lenses will increase eye hazard





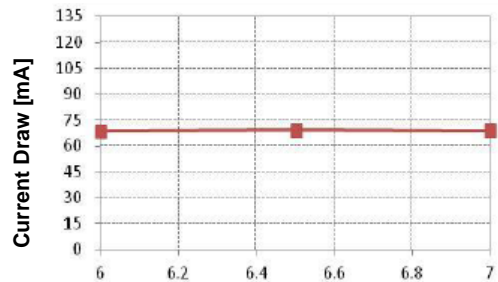
Typical Performance Curves

Output Power vs. Supply Voltage



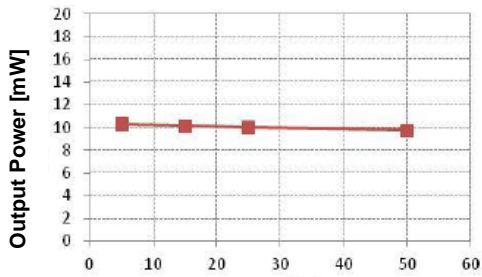
Supply Voltage [V]

Current Draw vs. Supply Voltage



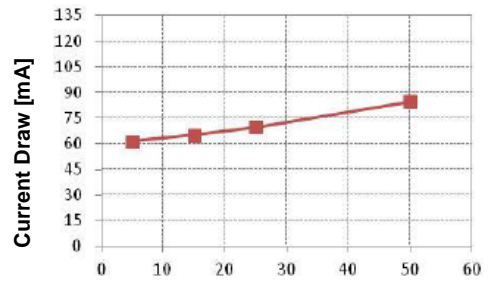
Supply Voltage [V]

Output Power vs. Temperature



Temperature [°C]

Current Draw vs. Temperature



Temperature [°C]



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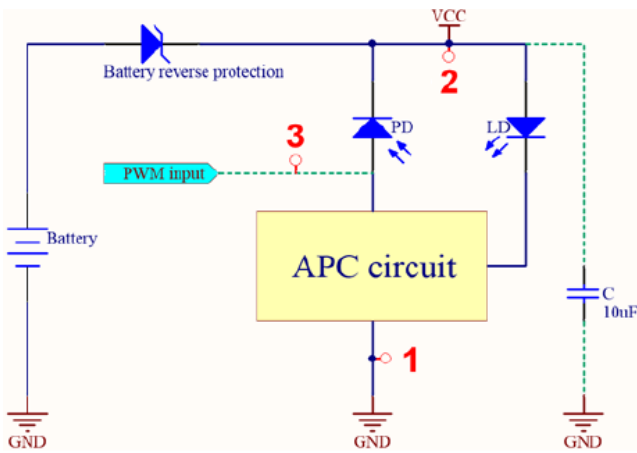
AUSTRIA



Electrical Connection

Pin Configuration		Bottom View	CW	PWM
Pin #	Function			
Pin 1	GND			
Pin 2	U _{CC}			
Pin 3	PWM			

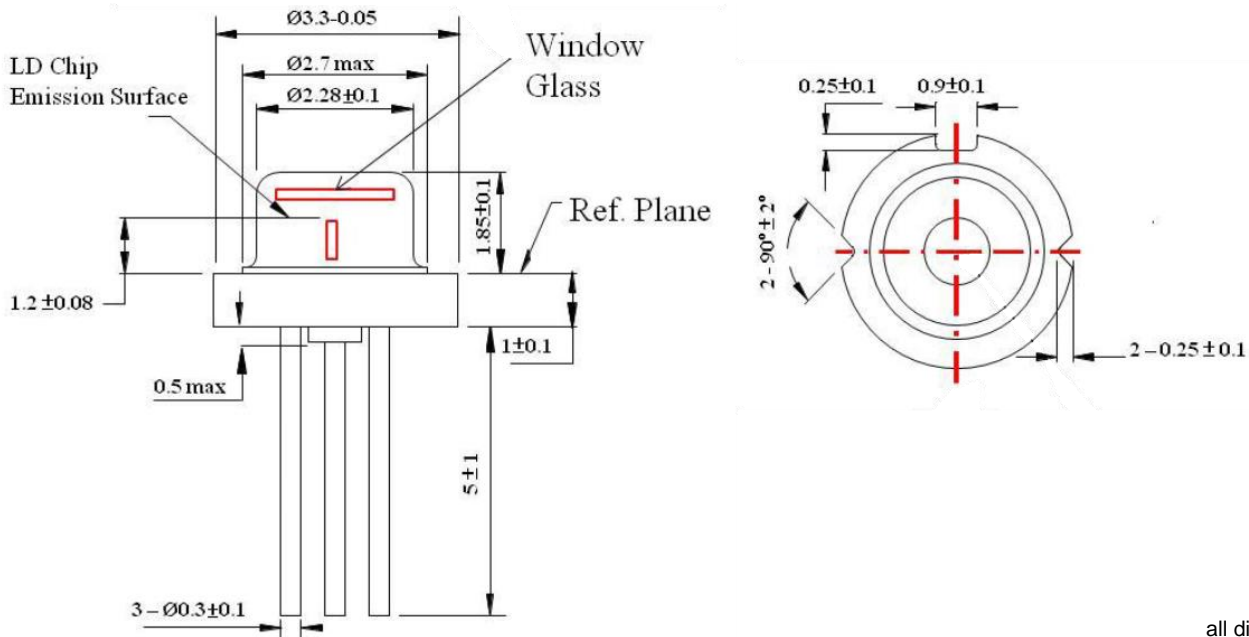
Schematics



- 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