

# ROITHNER LASERTECHNIK GmbH

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# ADL-65075TA2

#### **TECHNICAL DATA**



AUSTRIA

### Visible Laser Diode with integrated APC

By converting the external APC circuit board into an ASIC, we package the APC circuit into a tratidional TO-can together with the laser chip. From now on, single package APC function included laser diode os realized.

ADL-65075TA2 is your perfect solution for the sable light power output, compact size, high brightness laser light source.

#### **Features**

- 5.6 mm package and 650nm 7mW 70°C operation
- Low operation current
- Saving space and cost of laser module
- Voltae driven LD, easy to use

### **Applications**

- General purpose red laser light source
- Laser pointer
- Industrial laser markers / measuring instruments

#### Absolute Maximum Ratings ( $T_C=25$ °C)

Item	Symbol	Value	Unit
Power Supply Voltage	$V_{CC}$	2.5 – 6.0 *	V
CW Output Power	Po	10	mW
Operating Case Temperature	T <sub>C</sub>	-10 +70	°C
Storage Temperature	$T_{stg}$	-40 <b>+</b> 85	ů

<sup>\*</sup> Effective heat sink is recommended on 6V case due to extra heat

#### Specifications ( $T_C=25$ °C)

Item	Test Condition	Symbol	Min.	Тур.	Max.	Unit			
Optical Specifications									
Center Wavelength	P <sub>O</sub> = 7 mW	$\lambda_{\mathrm{C}}$	645	655	660	nm			
FWHM Beam Divergence		θ	6	9	12	deg			
		θ⊥	25	30	32	deg			
Parallel FFP Deviation Angle		$\Delta  \theta_{\parallel}$	-3.0	0	+3.0	deg			
Perpendicular FFP Deviation Angle		Δ θ⊥	-3.0	0	+3.0	deg			
Emission Point Accuracy	-	Δχ Δy Δz	-80	0	+80	μm			
Electrical Specifications									
Operating Current	P <sub>O</sub> =7mW, V <sub>CC</sub> =3V	l <sub>op</sub>	-	27	35	mΑ			
Variable Resistor		$V_R$	2	5.5	8	ΚΩ			
Power-Temp. Stability (25~70°C)	$P_O=7mW$ , $V_{CC}=3V$	$\Delta  P_{oT}$	-20	-10	0	%			
Power-V <sub>CC</sub> Stability (6.0~3.5V)	P <sub>O</sub> =7mW, T=25°C	$\Delta  P_{oV}$	-15	-10	0	%			
Power-V <sub>CC</sub> Stability (3.0~2.5V)		ΔP <sub>oV</sub>	-15	-10	0	%			

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





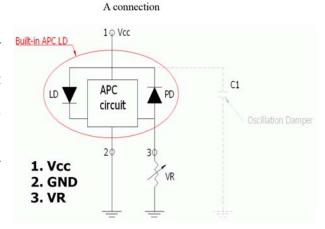
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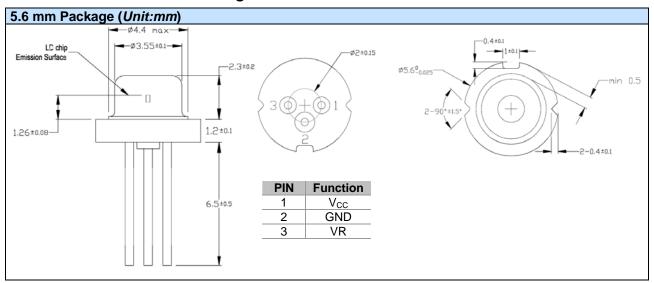


#### Block Diagram

- Traditinal LD needs to connect an external APC circuit board for the constant power operation. The VR (variable resistor) is used to adjust the laser output to a desired target power.
- 2. ADL-65075TA2 consists an AOC IC inside the TO-5.6 mm package, and leaves the VR outside for adjusting the optical output power.
- 3. Oscilation Damper (1µF) is recommended for stabilizing the optical ouput power.



#### Outline Dimension & Pin Assignment



#### **Cautions**

- 1. To protect laser from overdriving condition, setting VR to maximum value before you turn on VCC can minimized the laser ouput power.
- 2. Do not operate the device above the macimum rating condition, even momentarily. It may cause unexpected permanent damage to the device.
- Semiconductor laser device is very sensitive to electrostatic discharge. High voltage spike current may change the characteristics of the device, or malfunction at any time during its sercice periode. Therefor, proper measures for precenting electrostatic discharge are strongly recommended.
- 4. To obtain a stable characteristic and good reliability, the effective heat sink is necessary. So it is recommended that always apply proper heat sink before the device is operating.
- 5. Do not look into the laser beam directly by bare eyes. The laser beam may cause severe damage to human eyes.

