



## ADL-65075TA4



### TECHNICAL DATA

## Visible Laser Diode with integrated APC

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

ADL-65075TA4 is your perfect solution for the stable 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
- Voltage driven LD, easy to use

#### Applications

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

#### Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

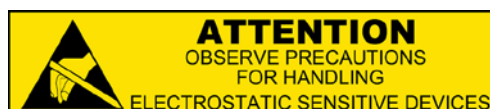
Item	Symbol	Value	Unit
Power Supply Voltage	$V_{CC}$	2.5 – 6.0 *	V
CW Output Power	$P_O$	10	mW
Operating Case Temperature	$T_C$	-10 ... +70	°C
Storage Temperature	$T_{stg}$	-40 ... +85	°C

\* Effective heat sink is recommended on 6V case due to extra heat

#### Specifications ( $T_C=25^\circ\text{C}$ )

Item	Test Condition	Symbol	Min.	Typ.	Max.	Unit
<b>Optical Specifications</b>						
Center Wavelength	$P_O = 7 \text{ mW}$	$\lambda_C$	645	650	660	nm
FWHM Beam Divergence		$\theta_{\parallel}$	6	9	12	deg
Parallel FFP Deviation Angle		$\theta_{\perp}$	25	28	32	deg
Perpendicular FFP Deviation Angle		$\Delta \theta_{\parallel}$	-3.0	0	+3.0	deg
Emission Point Accuracy		$\Delta \theta_{\perp}$	-3.0	0	+3.0	deg
Emission Point Accuracy	-	$\Delta x \Delta y \Delta z$	-80	0	+80	$\mu\text{m}$
<b>Electrical Specifications</b>						
Operating Current	$P_O=7\text{mW}, V_{CC}=3\text{V}$	$I_{op}$	-	25	35	mA
Variable Resistor		$V_R$	3	9	17	K $\Omega$
Power-Temp. Stability (25~70°C)	$P_O=7\text{mW}, V_{CC}=3\text{V}$	$\Delta P_{oT}$	-20	-10	0	%
Power- $V_{CC}$ Stability (6.0~3.5V)	$P_O=7\text{mW}, T=25^\circ\text{C}$	$\Delta P_{oV}$	-15	-10	0	%
Power- $V_{CC}$ Stability (3.0~2.5V)		$\Delta P_{oV}$	-15	-10	0	%

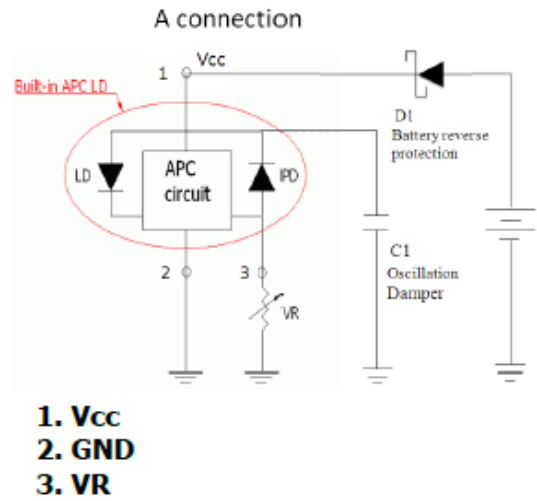
The above specifications are for reference purpose only and subjected to change without prior notice.





## Block Diagram

1. Traditional 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-65075TA4 consists an APC IC inside the TO-5.6 mm package, and leaves the VR outside for adjusting the optical output power.
3. Oscillation Damper (1 $\mu$ F) is recommended for stabilizing the optical output power.
4. Battery reverse protection is recommending to protect the APC circuit



## Outline Dimension & Pin Assignment

**5.6 mm Package (Unit:mm)**

PIN	Function
1	V <sub>CC</sub>
2	GND
3	VR

## Cautions

1. To protect laser from overdriving condition, setting VR to maximum value before you turn on VCC can minimized the laser output power.
2. Do not operate the device above the maximum rating condition, even momentarily. It may cause unexpected permanent damage to the device.
3. 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 service period. Therefore, proper measures for preventing 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.

