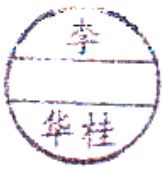
APPROVAL SHEET

(承认书)

ITEM: ADL-78051TB4

版本 (Verison) : 6-2D-LD78-021 V0.1
日期 (Date) : 2018-10-01

Prepared By (制订)	Confirmed By (确认)	Approved By (承认)
		
Date (日期)	Date (日期)	Date (日期)

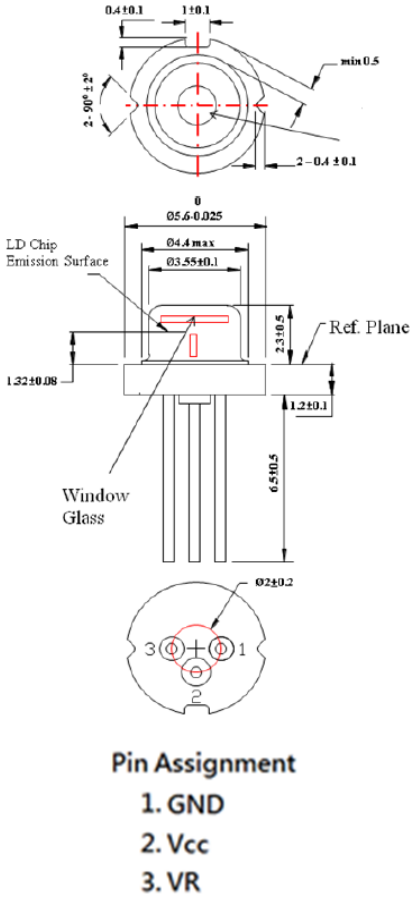
Infrared Laser Diode (with APC circuit inside)

ADL-78051TB4

6-2D-LD78-021 V0.1

780nm/5mW 60℃ APC Laser Diode

Dimension



Pin Assignment

1. GND
2. Vcc
3. VR

unit : mm

◆ Features

- 780m 5mW 60℃ high reliable operation
- Saving space and cost of laser module
- Voltage driven LD, easy to use
- Highly stable laser output power
- Stable output power vs. supply voltage from 2.5V ~ 6.0V
- Ligh-fuse : automatic shutdown when output power over the lin

◆ Applications

- High precision measuring instruments
- High precision industrial makers
- Smoke detector
- Defense sighting accessories

◆ Absolute maximum ratings

(TC=25℃)

Parameter	Symbol	Rating	Unit
Light output power	P_0	11	mW
Power supply voltage	Vcc	2.5 ~ 6.0*	V
Case Temperature	T_C	-10~+60	℃
Storage temperature	T_S	-40~+85	℃

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

◆ Electrical and optical characteristics

(TC=25℃)

Parameter	Symbol	Min	Typ.	Max.	Unit	Condition (CW)
Peak wavelength	λ	770	785	795	nm	Po = 5mW
Operating current	Iop	-	20	35	mA	Po=5mW,Vcc=3.0V
Variable resistor	VR	5	10	20	KΩ	
Parallel divergence angle	θ ∥	8	11	14	deg	Po = 5mW
Perpendicular divergence angle	θ ⊥	24	27	32	deg	
Parallel FFP deviation angle	△θ ∥	-3	0	+3	deg	
Perpendicular FFP deviation angle	△θ ⊥	-3	0	+3	deg	
Emission Point Accuracy	△x△y△z	-80	0	+80	um	
Power-Temp Stability (25 ~ 50℃)	$\triangle P_{OT}$	-30	-20	0	%	Po=5mW,Vcc=3.0V
Power-Vcc stability (6.0~3.5V)	△Pov	-15	-10	0	%	Po=5mW,Temp=25℃
Power-Vcc stability (3.0~2.5V)	△Pov	-10	-5	0	%	Po=5mW,Temp=25℃

●Precautions

* To Protect laser from overdriving condition, setting VR to maximum value before you turn on Vcc can minimized the laser output power.
* Do no operate the device above the maximum rating condition, every 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 service period. Therefore, proper measures for preventing electrostatic discharge are strongly recommend.
* 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
* Do not look into the laser beam directly by bare eyes. The laser beam may cause severe damage to human eyes.

For reference only. Contents above are subject to change without notice.

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780nm/5mW 60℃ APC Laser Diode

◆ 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-78051TB4 consistant an APC IC inside the TO-5.6mm package, and leaves the VR outside for adjusting the optical output power.
3. Oscillation Damper is recommended for stabilizing the optical output power.
4. Battery reverse protection is recommended for protecting the APC circuit.