

## Φ6.5mm 850nm Laser Module

### Features

- APC (auto power control) IC inside
- Low current consumption of the APC circuit
- Surge current protection
- High quality lens for output beam



### Absolute maximum ratings

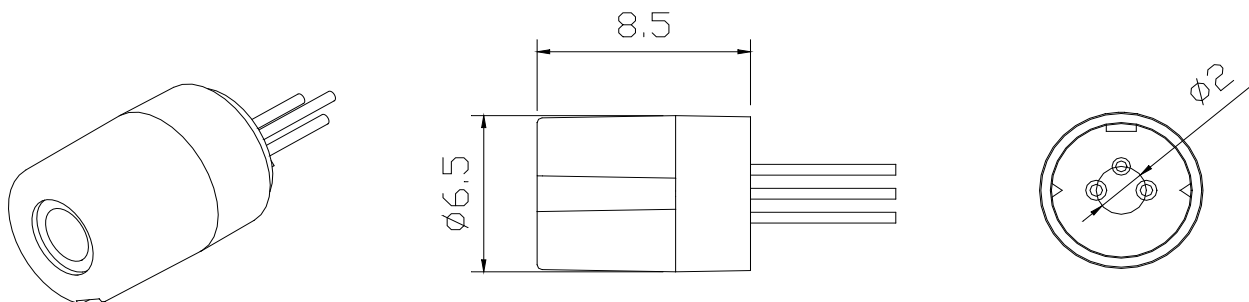
Parameter	Symbol	Rating	Unit
Power supply voltage	V <sub>cc</sub>	3.3	V
Laser Module optical output power	P <sub>o</sub>	<3	mW
Operation temperature	T <sub>opr</sub>	0~40	°C
Storage temperature	T <sub>stg</sub>	0~60	°C

### Electrical and optical characteristics (T<sub>c</sub>=25 °C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Wavelength	λ	-	845	-	nm	P <sub>o</sub> = 3mW
Operation current	I <sub>op</sub>	-	-	40	mA	P <sub>o</sub> = 3mW ; V <sub>cc</sub> =3V
Operation voltage	V <sub>op</sub>	2.5	-	3.3	Volt	
Laser Beam spot size at 10m				<15mm		
Divergence angle				1.5 mrad		

\* Sufficient heat dissipation is required for CW operation.

### Outline dimensions (Units: mm)

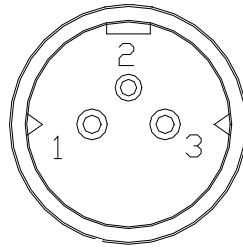
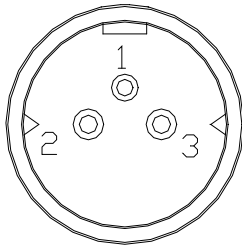


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### PIN Assignment:

A type : Heat sink stand (-)

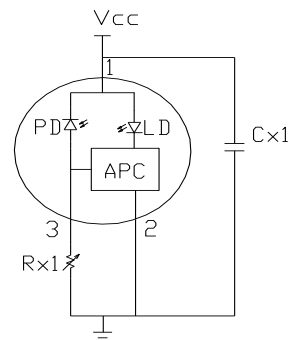
B type :Heat sink stand (+)



- Pin 1 : Vcc
- Pin 2 : GND
- Pin 3 : PD

### Laser power Adjustment Procedure

1. Connect 1 uF capacitor (Cx1) between Pin1 and Pin2.
2. Connect 20~50K ohm variable resistor (Rx1) between Pin2 and Pin3.
3. Set Vcc to the designed value.
4. Adjust Rx1 to obtain the desired output power.
5. Laser Safety Precautions



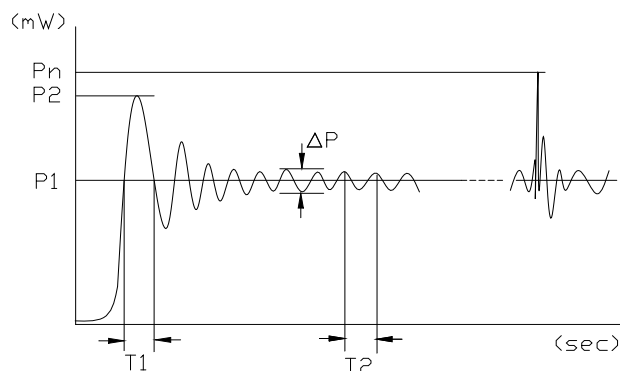
- (1) Do not increase Vcc value when the laser module is working near the maximum power . That is to protect laser from overdriving condition and make sure power is under 3 mW.
- (2) Do not operate the device above the maximum rating condition, even momentarily. It may cause unexpected permanent damage to the device

### Laser power stability

- P1 : 2.5mW
- P2 : < 3mW
- Pn : <3mW
- ΔP : < 0.5mW
- T1 : < 0.1us
- f2=(1/T2) : 3MHz

#### NOTE:

- P1 : Mean power
- P2 : Max power from turning on power
- Pn : Max power from Vcc noise
- ΔP : Power Amplitude of vibration
- T1 : Time between trigger and convergence



#### • Precautions

- \* Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- \* Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- \* Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- \* Observing visible or invisible laser beams with the human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- \* No laser device should be used in any application or situation where life or property is at risk in event of device failure.
- \* Specifications are subject to change without notice. Ensure that you have the latest specification by contacting us prior to purchase or use of the product.

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

