

Visible APC Laser Module

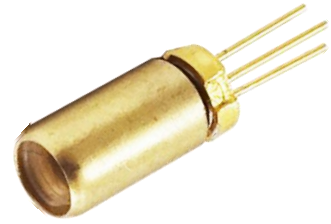
APCD-650-07-XX-A/B

6-2D-LM65-027 Rev.02

Φ3.3mm 650nm 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

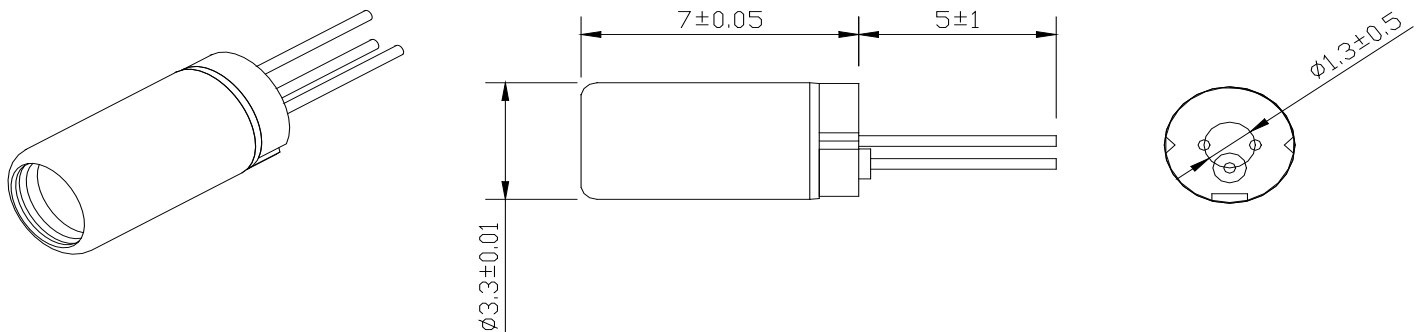
Parameter	Symbol	Rating	Unit
Power supply voltage	V _{cc}	3.3	V
Laser Module optical output power	P _o	<1	mW
Operation temperature	T _{opr}	0~40	°C
Storage temperature	T _{stg}	0~60	°C

Electrical and optical characteristics (T_c=25 °C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Wavelength	λ	-	655	-	nm	P _o = 1mW
Operation current	I _{op}	-	25	35	mA	P _o = 1mW ; V _{cc} =3V
Operation voltage	V _{op}	2.5	-	3.3	Volt	
Laser Beam spot size at 10m				<20mm		
Divergence angle				2 mrad		

* Sufficient heat dissipation is required for CW operation.

Outline dimensions (Units: mm)



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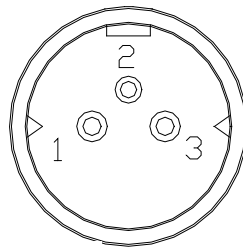
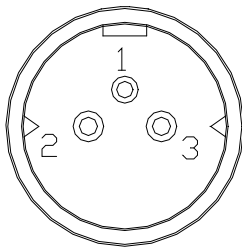
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Φ3.3mm 650nm Laser Module

PIN Assignment:

A type : Heat sink stand (-)

B type :Heat sink stand (+)

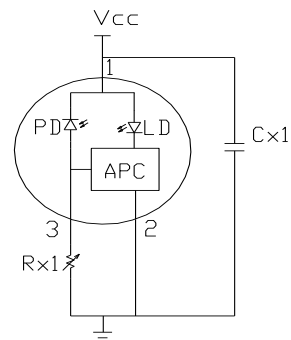


- Pin 1 : Vcc
- Pin 2 : GND
- Pin 3 : PD

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

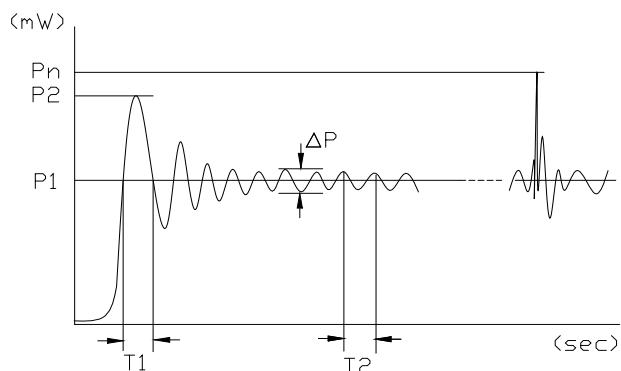


Laser power stability

- 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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