Visible APC Laser Module APCD-650-S7-XX-TA&TB

Φ3.3mm 650nm Laser Module

Power set by use

Features

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

Absolute maximum ratings

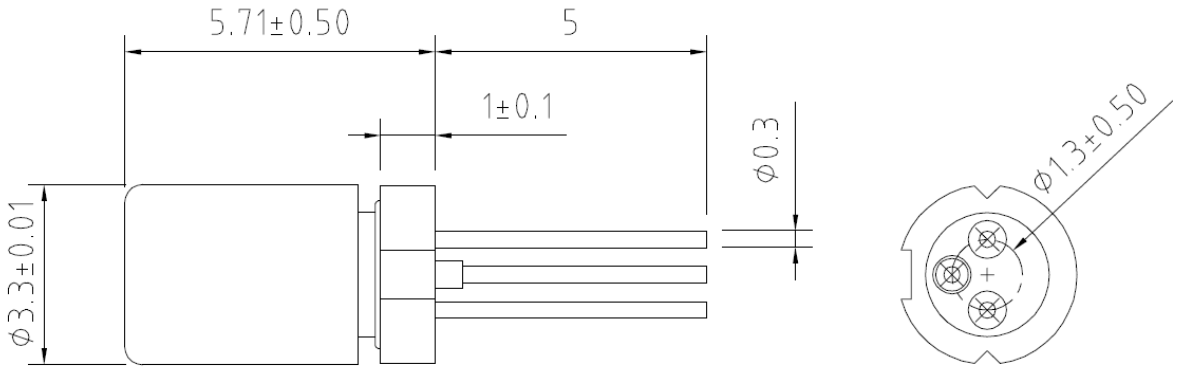
Parameter	Symbol	Rating	Unit
Power supply voltage	Vcc	5.5	V
Laser Module optical output power	Po	<1	mW
Operation temperature	Topr	0~50	℃
Storage temperature	Tstg	0~85	℃

Electrical and optical characteristics (T_c=25 °C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Wavelength	λ	-	655	-	nm	Po= 1mW
Operation current	Iop	-	-	35	mA	Po= 1mW ; Vcc=3V
Operation voltage	Vop	2.6	-	5	Volt	
Laser Beam spot size at 10m	<25mm					
Divergence angle	2.5 mrad					

* Sufficient heat dissipation is required for CW operation.

Outline dimensions (Units: mm)



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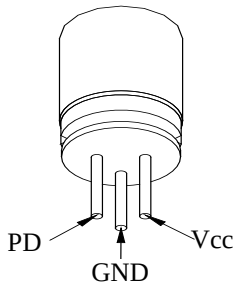
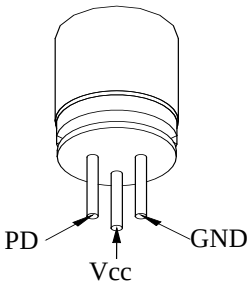
PIN Assignment

DC Power connection mode 1

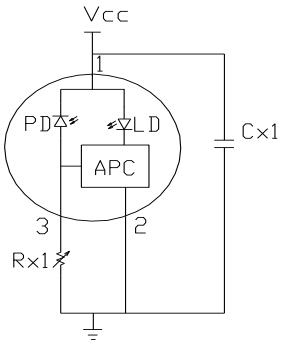
TA type : Heat sink stand (–)



T**B type** :Heat sink stand (+)



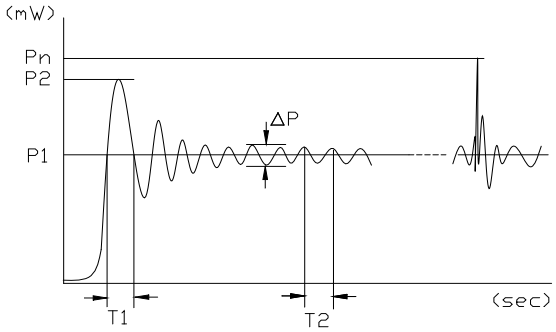
Laser power Adjustment Procedure



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 : 0.9mW
P2 : <1mW
Pn : <1mW
ΔP : < 0.05mW
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
f2=(1/T2) : Frequency of output power

- **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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