Φ4mm 850nm Laser Module

Power set by user

Features

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

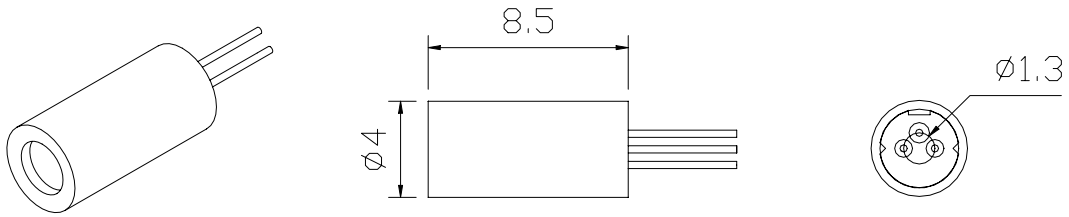
Absolute maximum ratings

Item	Symbol	Rating	Unit
Power supply voltage	V_{cc}	3.3	V
Laser Module optical output power	P_o	<3	mW
Operation temperature	T_{opr}	0~40	°C
Storage temperature	T_{stg}	0~60	°C

Electrical and optical characteristics (T_c=25 °C)

Item	Symbol	Min.	Typ.	Max	Unit	Condition
Wavelength	λ	-	845	-	nm	P_o= 3mW
Operation current	I_{op}	-	-	40	mA	P_o= 3mW V_{cc}=3V
Operation voltage	V_{op}	2.5	-	3.3	Volt	
Laser Beam spot size at 10m	<20mm					
Divergence angle	2 mrad					
Mean time to failure (MTTF) 25°C	>10000 hrs					

Outline dimensions (Units: mm)

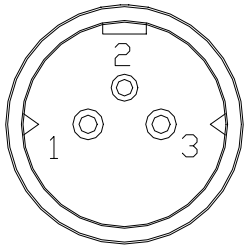


Aperture Size : 1.3mm

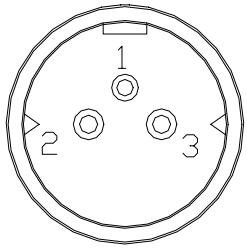
Laser Safety Precautions

1. Do not look into the laser beam directly by eyes. The laser beam may cause severe damage to human eyes.
2. Optical Lens is made of plastic or glass. Do not contaminate lens by soiling, oil or chemical.

PIN Assignment:



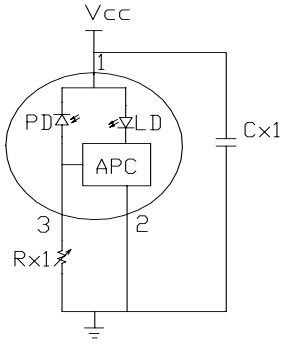
Pin 1 : Vcc
Pin 2 : GND
Pin 3 : PD



A type : Heat sink stand (–)

B type :Heat sink stand (+)

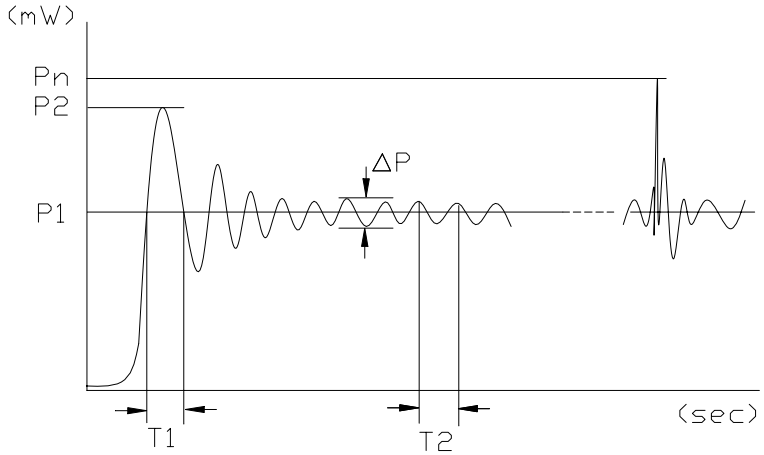
Laser power Adjustment Procedure



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 : 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
f2=(1/T2) : Frequency of output power