

**$\Phi 10.5\text{mm}$  650nm Laser Module**

$$P_o: < 1\text{mW}$$

**Features**

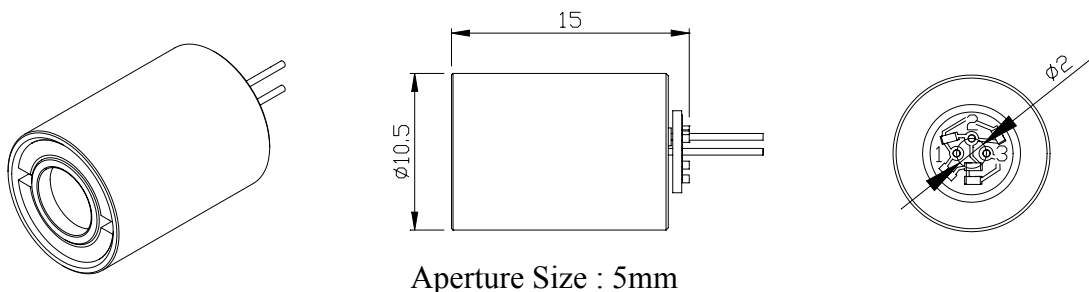
1. APC (auto power control) IC inside
2. Low current consumption of the APC circuit
3. Surge current protection
4. High quality glass lens for output beam
5. Adjustable focus

**Absolute maximum ratings**

Item	Symbol	Rating	Unit
Power supply voltage	$V_{cc}$	3.3	V
Laser Module optical output power	$P_o$	<1	mW
Operation temperature	$T_{opr}$	-5~50	°C
Storage temperature	$T_{stg}$	-20~70	°C

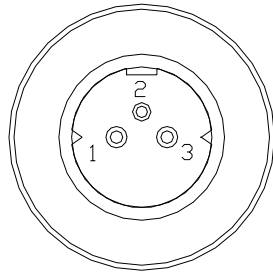
**Electrical and optical characteristics ( $T_c=25^\circ\text{C}$ )**

Item	Symbol	Min.	Typ.	Max	Unit	Condition
Wavelength	$\lambda$	-	655	-	nm	$P_o = 1\text{mW}$
Operation current	$I_{op}$	-	-	30	mA	$P_o = 1\text{mW}$ $V_{cc} = 3\text{V}$
Operation voltage	$V_{op}$	2.5	-	3.3	Volt	
Laser Beam spot size at 10m						<8mm
Divergence angle						0.9 mrad
Mean time to failure (MTTF) 25°C						>10000 hrs

**Outline dimensions (Units: mm)****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:**

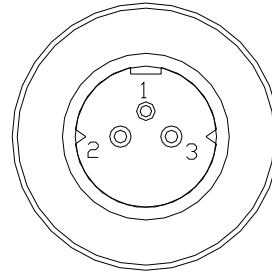


**A type** : Heat sink stand (-)

Pin 1 : Vcc

Pin 2 : GND

Pin 3 : NC ( No external connection )

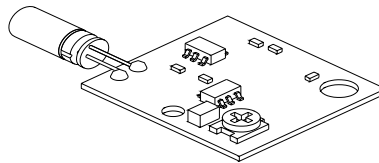
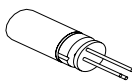
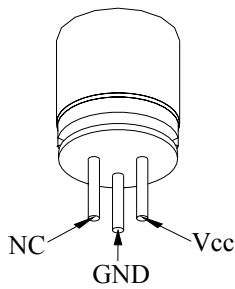


**B type** :Heat sink stand (+)

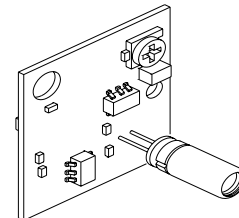
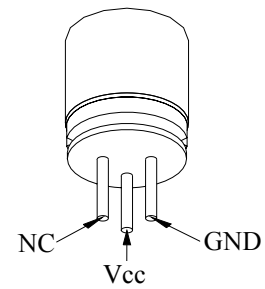
**Instruction manual**

**1. DC Power connection mode 1**

**A type** : Heat sink stand (-)



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



**2. DC Power connection mode 2**

