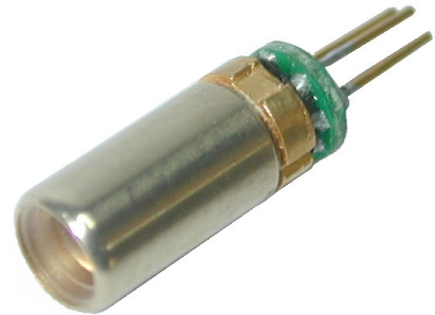


**$\Phi 3.3\text{mm}$  Smallest 650nm Laser Module**

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

**Features**

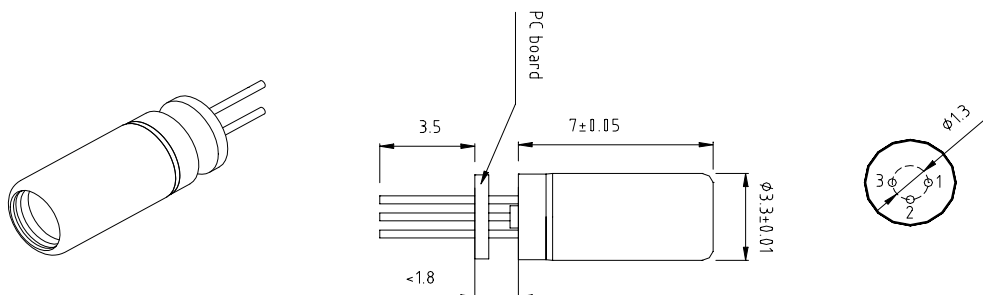
1. APC (auto power control) IC inside
2. Low current consumption of the APC circuit
3. Much smaller LD module
4. Surge current protection
5. High quality lens for output beam

**Absolute maximum ratings**

| Item                              | Symbol    | Rating | Unit |
|-----------------------------------|-----------|--------|------|
| Power supply voltage              | $V_{cc}$  | 3.3    | V    |
| Laser Module optical output power | $P_o$     | <1     | mW   |
| Operation temperature             | $T_{opr}$ | 0~40   | °C   |
| Storage temperature               | $T_{stg}$ | 0~60   | °C   |

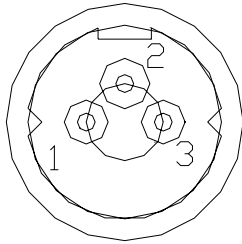
**Electrical and optical characteristics ( $T_c=25^\circ\text{C}$ )**

| Item                             | Symbol    | Min. | Typ. | Max    | Unit | Condition                               |
|----------------------------------|-----------|------|------|--------|------|-----------------------------------------|
| Wavelength                       | $\lambda$ | -    | 655  | -      | nm   | $P_o = 1\text{mW}$                      |
| Operation current                | $I_{op}$  | -    | -    | 35     | 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      |           |      |      | <20    | mm   |                                         |
| Divergence angle                 |           |      |      | 2      | mrad |                                         |
| Mean time to failure (MTTF) 25°C |           |      |      | >10000 | hrs  |                                         |

**Outline dimensions (Units: mm)**

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:**

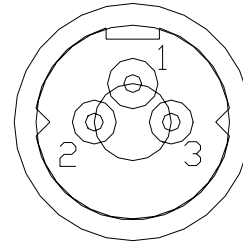


**A type** : Heat sink stand (-)

Pin 1 : Vcc

Pin 2 : GND

Pin 3 : NC ( No external connection )

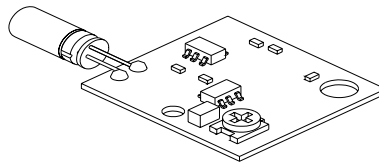
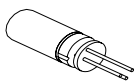
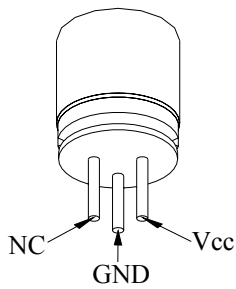


**B type** :Heat sink stand (+)

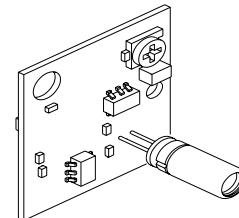
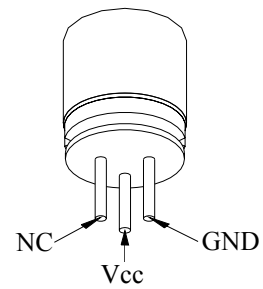
**Instruction manual**

**1. DC Power connection mode 1**

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



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



**2. DC Power connection mode 2**

