

**Φ4mm 650nm Laser Module**

**BEA Model No, 166-1-650**

**$P_o < 1mW$**

BEA's 166 Series Laser Diode Module is an extremely small, high quality product suitable for many applications. Typically used in medical, semiconductor manufacturing and very small, precise assembly and positioning applications.



**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

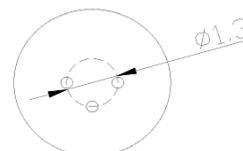
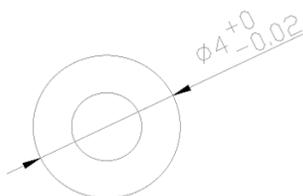
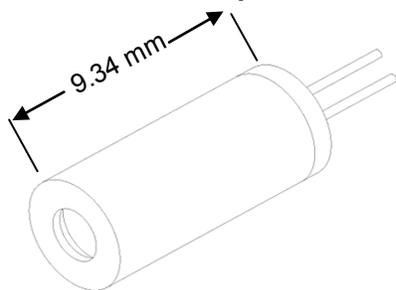
**Absolute Maximum Ratings**

Item	Symbol	Rating	Unit
Power Supply Voltage	V <sub>cc</sub>	3.3	V
Laser Module Optical Output Power	P <sub>o</sub>	<1	mW
Operation Temperature	T <sub>opr</sub>	0~40	°C
Storage Temperature	T <sub>stg</sub>	0~60	°C

**Electrical and Optical Characteristics (T<sub>c</sub>=25°C)**

Item	Symbol	Min.	Typ.	Max	Unit	Condition
Wavelength	λ	-	655	-	Nm	P <sub>o</sub> =1mW
Operation Current	I <sub>op</sub>	-	-	35	mA	P <sub>o</sub> =1mW V <sub>cc</sub> =3V
Operation Voltage	V <sub>op</sub>	2.5	-	3.3	Volt	-
Laser Beam Spot Size at 10m		<20mm				
Divergence Angle		2mrad				
Mean Time To Failure (MTTF) 25°C		>10000 hrs				

**Outline Dimensions (Units: mm)**



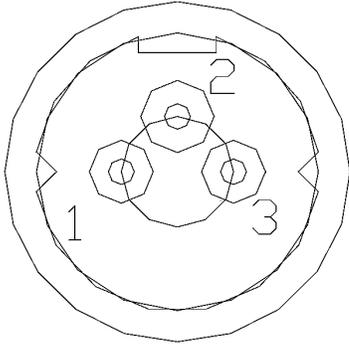
Aperture Size: 1.3mm

**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:



A type: Heat sink stand (-)

Pin 1: Vcc

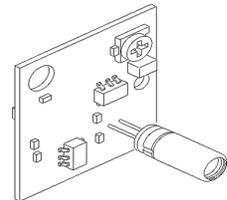
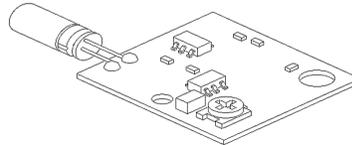
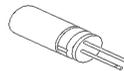
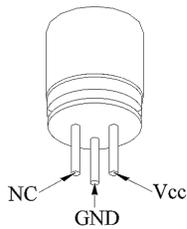
Pin 2: GND

Pin 3: NC (No external connection)

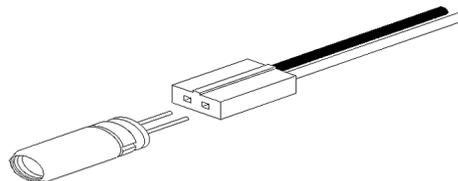
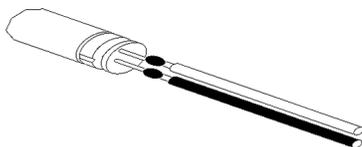
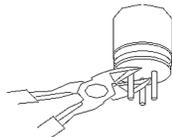
## Typical Termination Methods

### 1. P.C. Board

A type: Heat sink stand (-)



### 2. Solder or Connector



Please note when wave or hand soldering this device care must be taken to not overheat and damage this unit. We suggest heat sinking the housing on hand solder applications