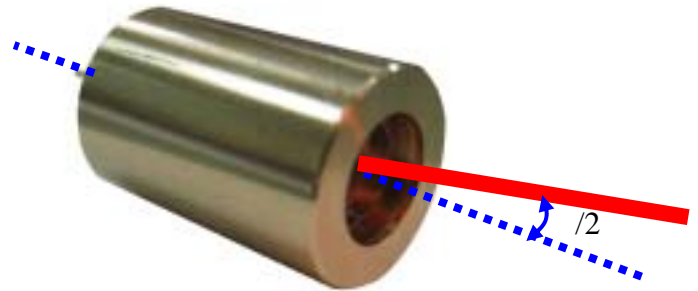


*Φ10.5mm 650nm*

Features

1. APC (auto power control) driver IC inside.
2. 5mW output power.
3. The output beam is aligned to the centre-line of the module. The range of  $\theta/2$  is  $< 0.05^\circ$ . It is a special purpose, reliable visible laser module and features in small size and easy operation.



Part No. Indications:

APC D – 650 – 12– C3 – A

Pin connection:

A — Heat sink stand (–)

B — Heat sink stand (+)

Output power: C3 —  $< 5\text{mW}$

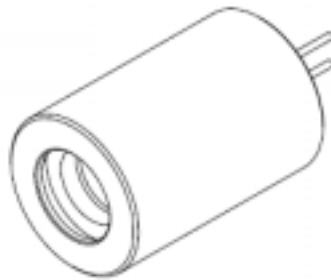
Absolute maximum ratings

Item	Symbol	Rating	Unit
Power supply voltage	$V_{cc}$	3.3	V
Laser Module optical output power	$P_o$	$< 5$	mW
Operation temperature	$T_{opr}$	-5~40	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-20~60	$^\circ\text{C}$

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

Item	Symbol	Min.	Typ.	Max	Unit	Condition
Wavelength		650	655	660	nm	$P_o=4.5\text{mW}$
Output power	$P_{out}$	2	4.5	5	mW	$V_{cc}=3\text{V}$
Operation current	$I_{op}$	-	30	40	mA	$P_o=4.5\text{mW}$ $V_{cc}=3\text{V}$
Operation voltage	$V_{op}$	2.8	-	3.3	Volt	
Laser Beam spot size at 10m		$< 15\text{mm}$				
Divergence angle		1.2 mrad				
Coaxial precision		$< 0.1$ degree				
Mean time to failure (MTTF) 4.5 mW 25 $^\circ\text{C}$		$> 10000$ hrs				

Outline dimensions (Units: mm)



- Pin 1 :** GND
- Pin 2 :** Vcc
- Pin 3 :** NC (no external connection)

**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.