

## 650 nm LASER DIODE

### Features

- .. Visible wavelength: 650 nm ( typ. )
- .. Optical power: 5 mW ( CW )
- .. TO-18 package with flat window (  $\varnothing$  5.6 mm )
- .. Low operating current:  $I_{op} = 25$  mA ( typ. )
- .. Low operating voltage:  $V_{op} = 2.8$  V ( max )

### Recommended operating optical power output

- .. Less than 5 m W

### Applications

- .. Laser pointers
- .. Laser modules
- .. Bar code readers
- .. Scanner

### Structure

- .. Index-guided structure
- .. AlGaInP quantum well structure
- .. Integrated Si photodiode for optical power monitor



### Description

The MCE-6E8F-Z01 is a red laser diode typically powered at 3 to 5 mW and designed for laser pointer.

The device contains a PIN photo diode to meet the designs of the automatic-power-control circuit. The small TO-18 package and lower consumption enable customers to easily incorporate our laser diodes into their products.

### Handling and Safety Precautions

Anti-static protection, such as ionized air blowers or grounded wrist straps with a 1 mega series resistor, should be used at all times when handling laser diodes. In addition, soldering irons should be well grounded.

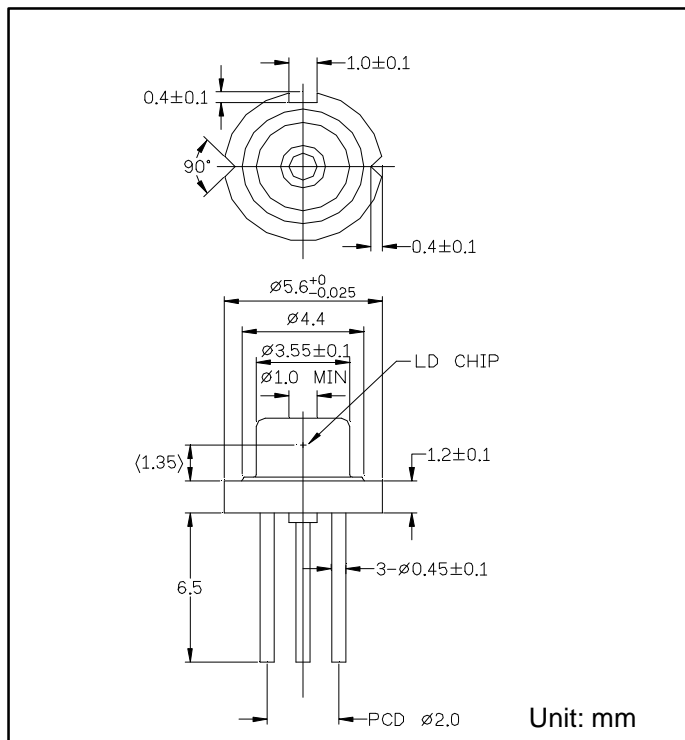
Overheating caused by soldering of the leads of a laser diode must be prevented. Recommend soldering iron temperature and maximum exposure time are below 260 °C and 10 seconds.

## ■ Absolute Maximum Ratings ( Ta : 25°C)

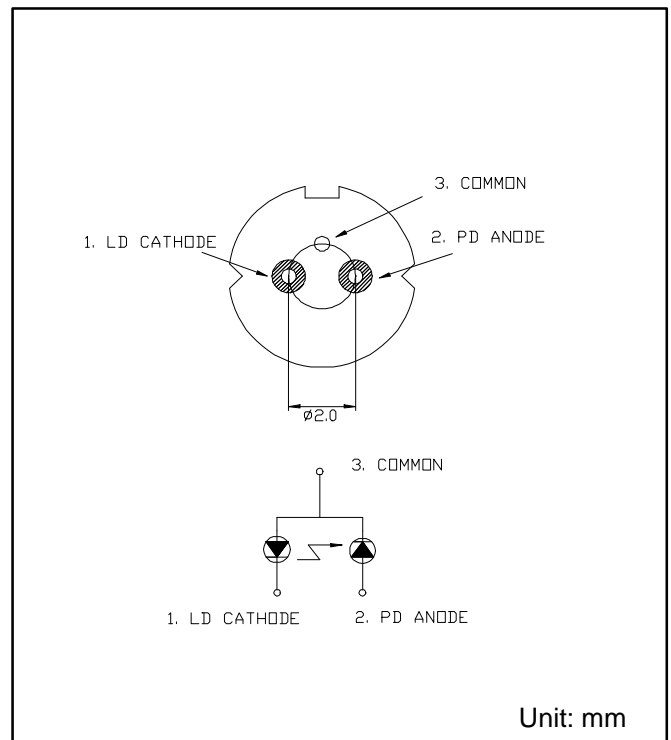
PARAMETERS	SYMBOL	Rated Value
Storage Temperature	Tstg	-20 to +85
Operating Temperature	Top	-10 to + 40
Optical output power ( m W )	Po	7
LD reverse voltage ( V )	Vr ( LD )	2
PD reverse voltage ( V )	Vr ( PD )	30

## ■ Optical & Electrical Characteristics ( Ta = 25°C )

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Optical output power	Po	Kink free,CW	3/4	3/4	5	mW
Threshold current	Ith		3/4	20	30	mA
Operating current	Iop	Po=5mW	3/4	25	35	mA
Operatign voltage	Vop	Po=5mW	3/4	2.2	2.8	V
Wavelength	lp	Po=5mW	3/4	650	660	nm
Beam divergence	Perpendicular	q^	3/4	33	3/4	deg
	Parallel	q/	3/4	7	3/4	deg
Slope efficiency	h	2mW [ I <sub>F</sub> (5mW)-I <sub>F</sub> (3mW) ]	0.1	0.7	1.0	mW/mA
Monitor current	I <sub>m</sub>	Po=5mW, Vr=5V	3/4	350	3/4	μA



### Package Dimensions



### Pin Connections ( Bottom View )

NOTE: Specifications are subjected to change without notice.

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REV. A2 01/09/2003