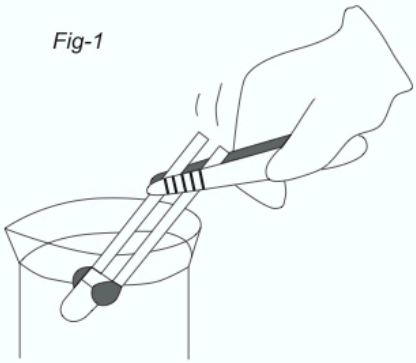
HOW TO USE LED

Generally, the LED can be used the same way as other general purposed semiconductors. However, the following prcautions must be taken to protect the LED.

▶ CLEANING

Don't used unspecified chemical liquids to clean the LED, they could harm the resin of the LED, If cleaning is necessary, please immerse the LED in alcohol or Freon TE at normal temperature for less than one minute. When other chemical solutions not specified are used, it may cause cracks or haze on the surfaces of the lens.(Fig-1)

Fig-1



▶ FORMING

1.Don't from the leads during or after soldering. If forming is required, it must be done before soldering.

2.Please remember, any pressure applied on resin can break gold wire in LED.

3.Form pin leads by securing under the tie bar cut(Fig-2-1), and bending with radio pliers, or the equivalent to avoid pressure on resin.(Fig-2-2)

Fig-2-1

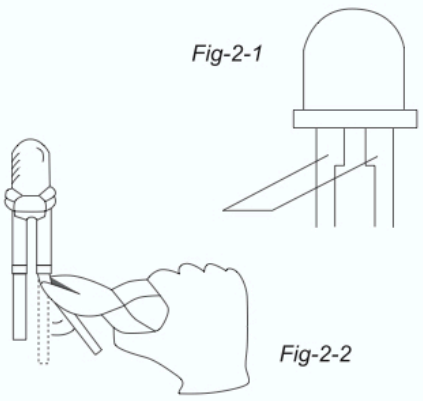
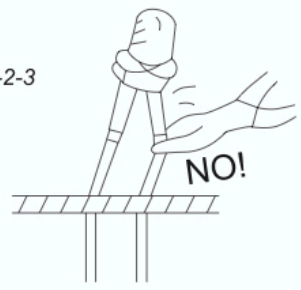


Fig-2-2

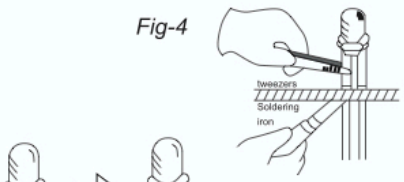
Fig-2-3



▶ SOLDERING

1.Solder under the tie bar cut(Fig-4). Hold pin leads with tweezers during solding, especially for smaller LEDs.

Fig-4



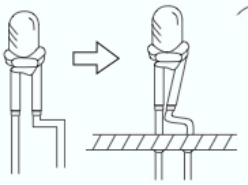


Fig-5

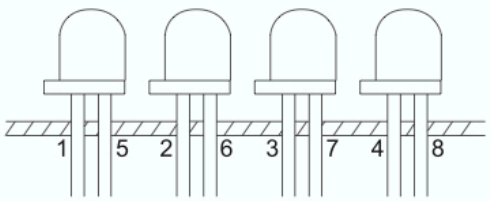
2.If pressure is a applied on LED while it is being on P.C. board, disconnection may occur during soldering or after mounting due to creep. Pin lead mounting holes must be coincided with original or formed pin lead pitch to prevent pressures.

3.During lead forming process should not be added any stressto the LED, otherwise fractures will be happended, The device epoxy and possibly break bond wires, which will cause failure.

4.When an LED is mounted into a P.C. board, pitch spacing should be aligned carefully to avoid causing any stress to the lead wires. Otherwise the stress will cause problem in high temperature operation. It is necessary for the LED to return to normal temperature in three minutes after the soldering operation.(Fig-5)

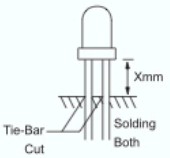
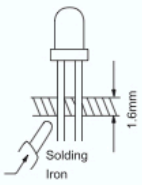
5.If soldering one line of LEDs on a P.C. board by using a soldering iron, don't solder both leads of the LED at the same time.(Fig-6)

Fig-6



6.The soldering iron should be operated under 30W power consumption.

7.The LED soldering specification is shown as below:

Method	Conditions	Temp.	Time
Soldering both Method	Dip LED up to Xmm from Resin 	230°C±5	Within 3 Seconds
Soldering Method	Soldering iron: 30W Tip: 4.5ø x 32mm Through hole P.C.B. 1.6mm thick 	Tip Temp: 295°C±5°C	Within 3 Seconds

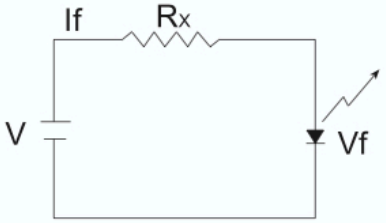
▶ BRIGHTNESS AND COLOR

1.For obtaining more brightness, multiple LEDs should be kept at the same current.

2.Increase current to increase brightness.

3.Check defects at a distance of 30cm from the LED to the eye.

4.Use on If 20mA If possible to obtain the most uniform brightness on yellow and green LEDs.



$$If = \frac{V\text{-}Vf}{Rx}$$