

General Information

Lead cutting

When lead is cut in high temperature, sometimes it might be the cause of destruction. Lead should be cut in room temperature. Special attention should be paid to right after soldering.

Thermal stress in operation:

Application of the addition agent is limited into external resin of the optical device because transmissivity is important. Therefore, deformation temperature is low comparing to LED resin such as IC, it is new maximum storage temperature (Tstg). If resin for the external case is designed without considering operating current and environmental conditions, LED may be destroy such as light power decrease or burn-out by thermal stress in the light device in operation. Also excessive current at ON/OFF mode may cause destruction.

Chemicals resistance

Below table shows solvents may be used or met.

When forbidden chemicals is used, surface of the outer case may be deformed. When the surface of the resin is rubbed by finger etc. before the resin is dried enough, product name and marking on the surface might be vanished.

Solvent name	Use or not	Solvent name	Use or not	Solvent name	Use
Ethyl alcohol	Yes	Methyl alcohol	Yes	Isopropyl alcohol	Yes
Trichloroetan	Δ	Trichlene	No	Chlorosen	No
Toluene	No	Thinner	No	Acetone	No

package might be changed if freon solvent is used for transmittive sensor, reflective sensor, displays.

Ultrasonic washing

When ultrasonic washing is not admitted, steam washing should be performed.

Type	Ultrasonic washing	Condition of ultrasonic washing
General package	yes	less than 28kHz. less than 300W. less than 30seconds.
Mini lamp	yes	
Surface mount	yes	
Display	yes	
Double end	no	

Above data are evaluation for individual device, and they should be applied after testing the assembled product in real use.

Precautions for static electricity sensitive devices

AllnGaP or GalnN LED are sensitive to static electricity and care should be fully in handing it. Particularly, when an overvoltage is applied, which exceed static voltage or surge voltage, its energydamages the LED. Therefore, take utmost proactive measures against static electricity and surge as to building an assembly line and handing the LED drive circuit.

Beware of destruction by static electricity in handling the LED. As proactive measures against static electricity, it is effective to earth your body(with 1MΩ), spread conductive mat on the floor, wear semi-conductive work uniform and shoes, and use semi-conductive contains. Also, be sure to earth the nose of a soldering iron. It is recommended to use an ionizer, etc., in the facility or environment where static electricity may be generated easily.

Preventing over current

In order to operate LED in stable condition, please put protective resistors less series.

Resistor value can be determined by the formula

$$R = \frac{V_s - V_F}{I_F}$$

V_s = source voltage
 V_F = forward voltage of LED
 I_F = recommended current of LED(10~20mA)

Brightness

For the purpose of obtaining uniform brightness, LED shall be kept at the same current.

It is useful for uniform brightness if you use larger sauce voltage and protective resistor.

Temperature

Item	Maximum Storage Temperature	Maximum Operation Temperature (LED dice temperature)
General package	-40 ~ +100°C	-25 ~ +85°C
Cluster LED	-25 ~ +90°C	-25 ~ +80°C
Mini Lamp	-40 ~ +100°C	-30 ~ +85°C
Surface Mount Type	-40 ~ 85°C	-30 ~ +85°C
Numeric Display Light Bar Dot Matrix Display	-40 ~ +100°C	-25 ~ +80°C

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