

UV Light

These devices are ultraviolet LEDs. During operation, the LED emits high intensity ultraviolet (UV) light, which is harmful to skin and eyes.

UV light is hazardous to skin and may cause cancer. Avoid exposure to UV light when LED is operational.

Precautions must be taken to avoid looking directly at the UV light without the use of UV light protective glasses. Do not look directly at the front of the LED or at the LED's lens when LED is operational.

Static Electricity

These products are ESD (electrostatic discharge) sensitive; static electricity and surge voltages seriously damage UV LEDs and can result in complete failure of the device. Precautions must be taken against ESD when handling or operating these devices.

Operating Conditions

In order to ensure the correct functioning of these LEDs, compliance to the maximum electrical specifications is paramount. These LEDs are particularly sensitive to any current value that exceeds the absolute maximum rating of the product. Any applied current in excess of the maximum specification will cause damage and possible complete failure of the product.

The current flowing in a LED is an exponential function of the voltage across it. A small change in voltage can produce a very large change in current and lead to complete failure of the LED. The use of current regulated drive circuits are recommended for these products.

Any attempt to drive these UV LEDs with a voltage source instead of a current source will cause damage and possible complete failure of the product.

These LEDs are susceptible to heat generation. Use care to design end product with adequate thermal management to ensure that LEDs do not exceed maximum recommended temperatures. Operating LEDs at temperatures in excess of specification will result in damage and possible complete failure of the product.

Attach the following warning labels on products/systems that use UV LEDs.

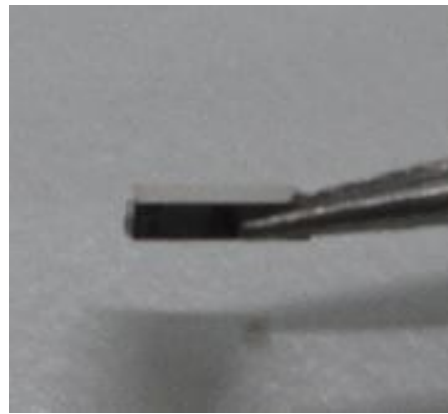


1) Storage

- To avoid moisture penetration, we recommend storing UV LEDs in a dry box with a desiccant. The recommended temperature and Relative humidity are between 5°C and 30°C and below 50% respectively.
- LEDs must be stored properly to maintain the device. If the LEDs are stored for 3 months or more after being shipped from SVC, a sealed container with a nitrogen atmosphere should be used for storage.
- Replace the remained LEDs into the moisture-proof bag and reseal the bag after work to avoid those LEDs being exposed to moisture. Prolonged exposure to moisture can adversely affect the proper functioning of the LEDs.
- If the package has been opened more than 168hr(MSL_3) or the color of the desiccant changes, components should be dried for 10-12hr at 60±5°C.
- The conditions of resealing are as follows:
 - Temperature is 5 to 40°C and Relative humidity is less than 30%

2) Handling Precautions

- VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can penetrate silicone encapsulants of LEDs and discolor them when exposed to heat and photonic energy. The result can be a significant loss of light output from the fixture. Knowledge of the properties of the materials selected to be used in the construction of fixtures can help prevent these issues.
- In case of attaching LEDs, do not use adhesives that outgas organic vapor.
- Soldering should be done as soon as possible after opening the moisture-proof bag.
- Do not rapidly cool device after soldering.
- Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering.
- Components should not be mounted on warped (non coplanar) portion of PCB.
- The UV LED is protected by a lens which requires careful handling as shown in the images located at the top of page 15:
 - Avoid touching glass lens parts especially with sharp tools such as Tweezers
 - Avoid leaving fingerprints on glass lens parts.
 - When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that excessive mechanical pressure on the surface must be prevented.



3) Safety for eyes and skin

- The products emit high intensity ultraviolet light which can harm your eyes and skin. Do not look directly into the UV light and wear protective equipment during operation.

4) Cleaning

- This device is not allowed to be used in any type of fluid such as water, oil, organic solvent, etc.

5) Others

- The appearance and specifications of the product may be modified for improvement without notice.
- When the LEDs are in operation the maximum current should be decided after measuring the package temperature.
- The driving circuit must be designed to allow forward voltage only when it is ON or OFF. If the reverse voltage is applied to LED, migration can be generated resulting in LED damage.
- Do not handle this product with acid or sulfur material in sealed space.

