Powerlux Technology Co., Ltd.

Power LED Application Note

Assembly and Handling Information

1. Topic.

Instruction for the assembly and handling of Powerlux LED.

2. Handling

Powerlux LED is encapsulated using optical silicone. The bottom metal (slug/heat-sink) is anode. Please avoid connecting slug to cathode as this will cause short-circuit.

Only picked up LED by gripping at the white plastic body.

Avoid putting pressure or puncturing onto the silicone lens. When stress is applied on silicone lens, it may damage optical properties and damage the internal wirebond.

Figure 1A & 1B illustrate correct handling of Powerlux LED.

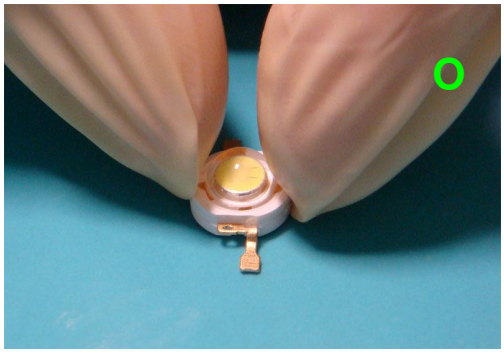


Figure:1A. Pick up by fingers; please grip the both side of the white plastic body not the lens.

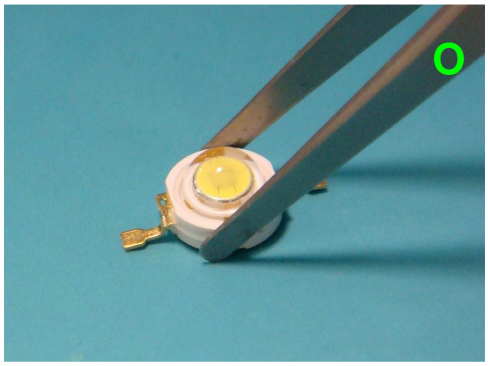


Figure:1B. Handling with tweezers; hold the both side of the white plastic body not the lens.

Figure 2A, 2B illustrate incorrect handling.

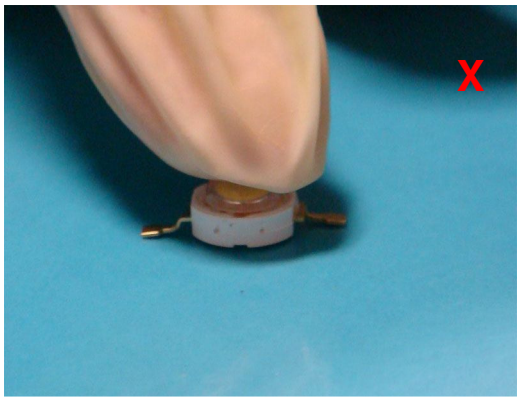


Figure 2A. Do not putting pressure onto the lens

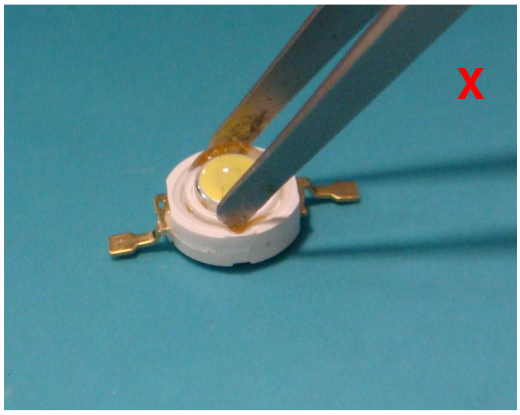


Figure 2B. Do not grip the lens

Manual mounting of Powerlux LED onto MCPCB,
Gently press the white plastic body or the lead. See figure 3.

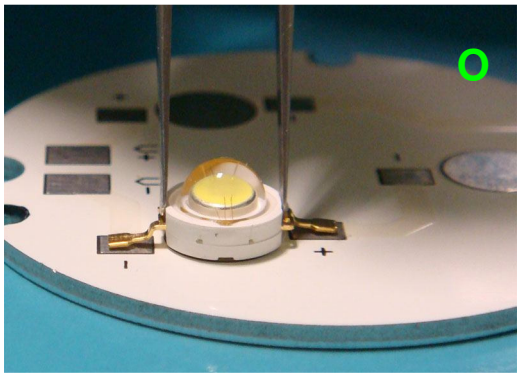


Figure 3. Place LED onto MCPCB with tweezers. Use tweezers to press on the LED downward to create good thermal contact between heatsink and MCPCB.

Figure 4 Incorrect handling, May damage optical properties and damage internal wirebond.

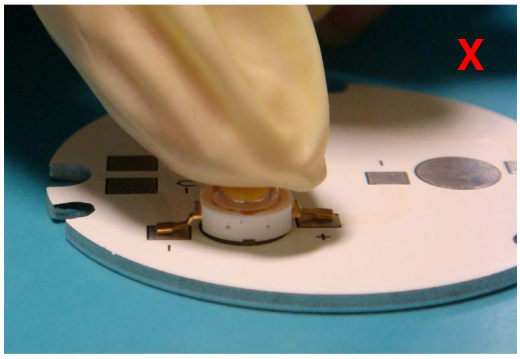


Figure4. Do not press (or puncture by tweezers)on the silicone lens.

Also must not press or rotate the lens during assembly as this will cause internal wirebond to break as well.

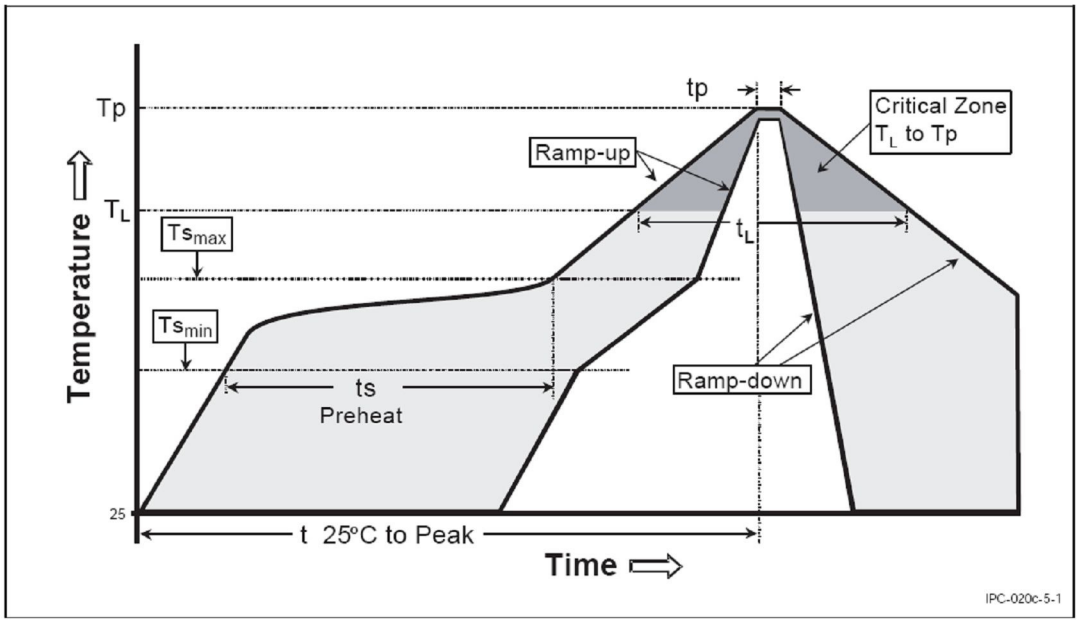
Lens cleaning

A minimal amount of dust will reduce the efficiency of illumination. Proper steps should be taken to keep LED free of dust. Try to store LED in ESD packaging or dust free environment if not use.

In the event that emitter required to be cleaned. Gently clean the lens with soft brush. Or use isopropyl alcohol, IPA to remove dirt from LED lens softly. (Do not use other type of solvent).

3. IR Reflow Instruction.

Powerlux LED applied to JEDEC 020c Pb-Free IR Reflow profile. This is illustrated on Figure 5. IR Reflow Temperature must be under 260℃.Peak time under 30sec.



Profile Feature	**Sn-Pb Eutectic Assembly**	**Pb-Free Assembly**
Average Ramp-Up Rate (Ts_{max} to T_p)	3℃/second max.	3℃/seconds max.
Preheat -Temperature Min (Ts_{min}) -Temperature Max(Ts_{max}) -Time(ts_{min} to ts_{max})	100℃ 150℃ 60-120 seconds	150℃ 200℃ 60-180 seconds
Time maintained above: -Temperature(T_L) -Time(t_L)	183℃ 60-150 seconds	217℃ 60-150 seconds
Peak/Classification Temperature (T_p)	220℃	260℃
Time within 5℃ of actual Peak Temperature (t_p)	5-8 seconds	5- 8 seconds
Ramp-Down Rate	6℃/second max.	6℃/seconds max.
Time 25℃ to Peak Temperature	6 minutes max.	8 minutes max.