WHAT IS CLAIMED IS:

1. A package structure, comprising:

a circuit substrate comprising a top surface and a side surface;

a light emitting diode array comprising a plurality of light emitting diodes disposed on the top surface of the circuit substrate;

a first encapsulant disposed above the circuit substrate, wherein the first encapsulant comprises a main portion and an extension portion, the main portion is disposed parallel to the top surface and disposed between the plurality of light emitting diodes, and the extension portion extends from the main portion to the side surface of the circuit substrate, wherein the top surfaces of the plurality of light emitting diodes are free of the first encapsulant; and

a sealant disposed below the extension portion of the first encapsulant, wherein the sealant contacts the first encapsulant and the circuit substrate, and a flat surface of the first encapsulant is coplanar with a flat surface the sealant.

2. The package structure of claim 1, wherein the first encapsulant comprises 5~20 wt% of black particles.

3. The package structure of claim 1, wherein a cutting profile of the first encapsulant and a cutting profile of the sealant form a continuous structure on the coplanar surface.

4. The package structure of claim 1, wherein a material of the sealant comprises acrylic resin.

5. The package structure of claim 1, wherein an optical density of the sealant is greater than 3.

6. The package structure of claim 1, wherein a flat surface of the main portion of the first encapsulant is coplanar with a flat surface of the extension portion of the first encapsulant and a flat surface of the sealant.

7. The package structure of claim 1, wherein a flat surface of the main portion of the first encapsulant is coplanar with a flat surface of the sealant, and the extension portion of the first encapsulant is between the flat surface of the sealant and the side surface of the circuit substrate.

8. The package structure of claim 1, further comprising a second encapsulant covering the light emitting diode array and the first encapsulant.

9. The package structure of claim 8, wherein the flat surface of the first encapsulant is coplanar with the flat surface of the sealant and the flat surface of the second encapsulant.

10. The package structure of claim 1, wherein a distance between the flat surface of the sealant and the side surface of the circuit substrate is in a range from 5 μm to 15 μm.

11. The package structure of claim 1, wherein a distance between the flat surface of the sealant and the side surface of the circuit substrate is in a range from 45 μm to 55 μm.

12. The package structure of claim 1, wherein the light emitting diode array comprises a light emitting diode, and a distance between a top surface of the main portion of the first encapsulant and a top surface of the light emitting diode is in a range from 5 μm to 10 μm.

13. The package structure of claim 1, wherein the light emitting diode array comprises a light emitting diode, the light emitting diode array comprises a bonding pad between the light emitting diode and the circuit substrate, and a height position of the main portion of the first encapsulant is substantially the same as a height position of the bonding pad.

14. A manufacturing method for a package structure, comprising:

forming a first encapsulant on a circuit substrate and a light emitting diode array, wherein the light emitting diode array comprising a plurality of light emitting diodes is disposed on the circuit substrate, the circuit substrate comprises a top surface and a side surface, the first encapsulant comprises a main portion and an extension portion, the main portion is disposed parallel to the top surface and disposed between the plurality of light emitting diodes, and the extension portion extends from the main portion to the side surface of the circuit substrate;

forming a sealant on the side surface of the circuit substrate, the sealant contacts the side surface of the circuit substrate and the extension portion of the first encapsulant;

performing an etching operation to mostly remove the first encapsulant above the light emitting diode array;

performing a dry cleaning operation to completely remove an ashing portion of the first encapsulant above the light emitting diode array and expose top surfaces of the plurality of light emitting diodes; and

forming a second encapsulant on the light emitting diode array and the first encapsulant, wherein the first encapsulant is between the light emitting diode array.

15. The manufacturing method for the package structure of claim 14, further comprising:

performing a cutting operation after forming the sealant on the side surface of the circuit substrate, and thereby a flat surface of the main portion of the first encapsulant is coplanar with a flat surface of the sealant.

16. The manufacturing method for the package structure of claim 14, further comprising:

performing a cutting operation after forming the sealant on the side surface of the circuit substrate, and thereby a flat surface of the main portion of the first encapsulant is coplanar with a flat surface of the extension portion of the first encapsulant and a flat surface of the sealant.

17. The manufacturing method for the package structure of claim 14, further comprising:

performing a cutting operation after forming the second encapsulant on the light emitting diode array and on the first encapsulant between the light emitting diode array, and thereby a flat surface of the main portion of the first encapsulant is coplanar with a flat surface of the second encapsulant, a flat surface of the extension portion of the first encapsulant and a flat surface of the sealant.

18. The manufacturing method for the package structure of claim 14, further comprising:

performing a cutting operation after forming the second encapsulant on the light emitting diode array and on the first encapsulant between the light emitting diode array, and thereby a flat surface of the main portion of the first encapsulant is coplanar with a flat surface of the second encapsulant and a flat surface of the sealant.

19. The manufacturing method for the package structure of claim 14, wherein the first encapsulant comprises 5~20 wt% of black particles.

20. The manufacturing method for the package structure of claim 14, wherein an optical density of the sealant is greater than 3.