

CLAIMS

1. A semiconductor device, comprising:
 - a substrate;
 - an adhesive member arranged on a surface of the substrate;
 - 5 a first chip stacked on the adhesive member with a first adhesive piece interposed therebetween; and
 - a second chip stacked on the first chip with a second adhesive piece interposed therebetween,
 - wherein the adhesive member has a multilayer structure
 - 10 including a pair of surface layers formed of a cured product of a thermosetting resin composition and an intermediate layer arranged between the pair of surface layers; and
 - wherein at least a part of a peripheral portion of the first chip protrudes laterally from the adhesive member.
- 15 2. A semiconductor device, comprising:
 - a substrate;
 - a chip arranged on a surface of the substrate;
 - a plurality of support pieces arranged around the chip on the
 - surface of the substrate;
 - 20 an adhesive member supported by the plurality of support pieces and arranged so as to cover the chip; and
 - a first chip stacked on the adhesive member with a first adhesive piece interposed therebetween,
 - wherein the adhesive member has a multilayer structure
 - 25 including a pair of surface layers formed of a cured product of a thermosetting resin composition and an intermediate layer arranged

between the pair of surface layers.

3. The semiconductor device according to claim 2, further comprising:

5 a second chip stacked on the first chip with a second adhesive piece interposed therebetween.

4. The semiconductor device according to claim 1 or 3, wherein at least a part of a peripheral portion of the second chip protrudes laterally from the first chip.

5. The semiconductor device according to any one of claims 2 to 4, 10 wherein at least a part of a peripheral portion of the first chip protrudes laterally from the adhesive member.

6. A semiconductor device, comprising:

a substrate;

15 a first chip with an adhesive piece arranged on a surface of the substrate;

an adhesive member arranged on a surface of the adhesive piece of the first chip with the adhesive piece; and

a second chip with an adhesive piece arranged on a surface of the adhesive member,

20 wherein the adhesive member has a multilayer structure including a pair of surface layers formed of a cured product of a thermosetting resin composition and an intermediate layer arranged between the pair of surface layers.

7. The semiconductor device according to claim 6,

25 wherein at least a part of a peripheral portion of the second chip with the adhesive piece protrudes laterally from the adhesive member.

8. The semiconductor device according to any one of claims 1 to 7, wherein the intermediate layer is a polyimide layer.

9. The semiconductor device according to any one of claims 1 to 7, wherein the intermediate layer is a metal layer.

5 10. The semiconductor device according to any one of claims 1 to 9, wherein the semiconductor device is a three-dimensional NAND memory.

11. A semiconductor device manufacturing method, comprising:

10 stacking a first chip on a surface of an adhesive member with a first adhesive piece interposed therebetween on a substrate; and

stacking a second chip on a surface of the first chip with a second adhesive piece interposed therebetween,

15 wherein the first and second adhesive pieces are formed of a thermosetting resin composition, the adhesive member has a multilayer structure including a pair of surface layers formed of a thermosetting resin composition and an intermediate layer arranged between the pair of surface layers, and the adhesive member, the first adhesive piece, and the second adhesive piece are collectively cured.