an annular sidewall extended upward from the periphery of the base so that the dicing tape hermetically seals the top opening of the chamber, wherein a plurality of semiconductor dies are attached on to the dicing tape and are located directly above the top opening of the chamber;

introducing a pressure difference between opposing sides of the dicing tape so that the dicing tape is deformed to have a convex or concave shape relative to the top opening of the chamber; and

releasing the pressure difference, wherein the semiconductors dies on a dicing tape which is deformed with a first aspect ratio are picked up with a smaller force than the semiconductor dies on the dicing tape which is deformed with a second aspect ratio smaller than the first aspect ratio in a step of picking up the semiconductor dies from the dicing tape after the step of releasing the pressure difference.

17. The method according to claim 16, wherein the pressure difference is introduced by a pressure regulator connected to the chamber via at least one inlet disposed in the base.

18. The method according to claim 17, wherein the semiconductor dies are placed outside the chamber, and the pressure inside the chamber is larger than the pressure outside the chamber so that the dicing tape has a convex shape relative to the top opening of the chamber.

19. The method according to claim 18, wherein the pressure regulator increases the pressure inside the chamber by introducing a fluid into the chamber.

20. The method according to claim 19, wherein the pressure inside the chamber is increased gradually by controlling flow rate of the fluid.

21. The method according to claim 17, wherein the semiconductor dies are placed inside the chamber, and the pressure inside the chamber is smaller than the pressure outside the chamber so that the dicing tape has a concave shape relative to the top opening of the chamber.

22. The method according to claim 21, wherein the pressure regulator decreases the pressure inside the chamber using a vacuum pump.

23. The method according to claim 22, wherein the pressure inside the chamber is decreased gradually.

24. The method according to claim 16, wherein the pressure inside the chamber is in a range of about 0.01 MPa - about 0.5 MPa.

25. The method according to claim 16, wherein the deformed dicing tape has an aspect ratio of about 0.06-0.3.

~~26. The method according to claim 16, wherein the semiconductors dies on a dicing tape which is deformed with a first aspect ratio are picked up with a smaller force than the semiconductor dies on the dicing tape which is deformed with a second aspect ratio smaller than the first aspect ratio in a step of picking up the semiconductor dies from the dicing tape after the step of releasing the pressure difference.~~

~~27~~26. The method according to claim 16, further comprising a step of irradiating a UV light onto the deformed dicing tape.