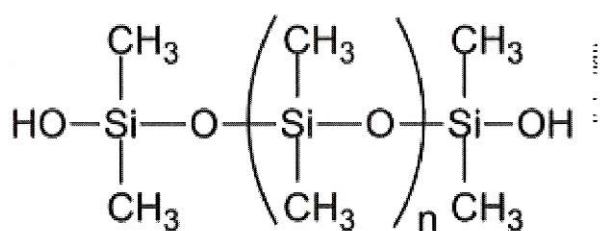


without protruding from the device, and a method for processing semiconductors using the same.

[0009a] In a first aspect, there is provided a conductive adhesive film, which comprises two or more types of metal particles including at least Cu, and a polymer that has a polydimethylsiloxane structure, wherein said polydimethylsiloxane structure:

- i) contains -COOH, -CR<sub>x</sub>(OH)<sub>y</sub>, or -NR<sub>2</sub> as a functional group, where R is selected from H, alkyl, or aryl group, and x+y=3;
- ii) contains a double bond or
- iii) has the following structure;



and wherein the conductive adhesive film contains at least one type of flux component selected from alcohol, ketone, carboxylic acid, or amine, wherein the flux component is in a state of phase separation with the polymer that has the polydimethylsiloxane structure.

[0010] That is, the present disclosure is related to a conductive adhesive film, which comprises two or more types of metal particles including at least Cu, and a polymer that has a polydimethylsiloxane structure, a dicing die bonding film, which comprises the conductive adhesive film and a dicing tape, and further, a method for processing semiconductor using the same.

Further, it is preferable that the metal particles contain a component with a melting point of 250°C or lower, and are capable of forming an intermetallic compound.

Further, in order to facilitate intermetallic compound reaction, it is preferable that the conductive adhesive tape contains at least one type of flux component selected from alcohol, ketone, carboxylic acid, or amine, wherein the flux component is in a state of phase separation with the polymer that has a polydimethylsiloxane structure.

Furthermore, it is preferable that at least part of the polymer that has a polydimethylsiloxane structure contains -COOH, -CR<sub>x</sub>(OH)<sub>y</sub>, or -NR<sub>2</sub> as a functional group (where R is selected from H, alkyl, or aryl group, and x+y=3), and further, contains

a double bond.

Furthermore, it is preferable that the amount of the metal particle based on the entire film is 55 volume% or more and that the amount of the polymer that has a polydimethylsiloxane structure is 5 volume% or more.

Further, it is preferable that the conductive adhesive film comprises a radical generator with a one-hour half-life temperature of 200°C or higher.

[0010a] In another aspect, there is provided a dicing die bonding film, which comprises the conductive adhesive film as defined above and a dicing tape laminated thereon.

[0010b] In another aspect, there is provided a method for processing semiconductor wafer using the conductive adhesive film as defined above.

[0010c] In another aspect, there is provided a method for processing semiconductor wafer using the dicing die bonding film as defined above.

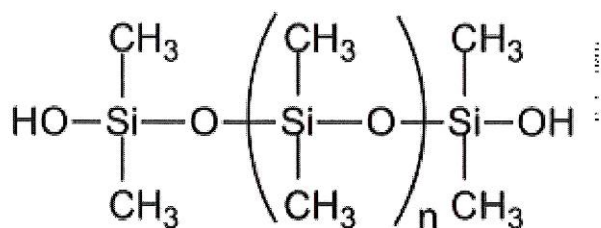
#### **Effect**

[0011] By dicing after adhering to a semiconductor wafer, the above-described adhesive film of the present disclosure allows semiconductor chips to be packaged on a lead frame, using proper quantities of the adhesive film in a state of lamination on the rear-side electrode.

Preferably, it contains a metal component with a melting point of 250°C or lower and can be sintered at a temperature of 250°C or lower, contains Cu, and is capable of

### Claims

1. A conductive adhesive film, which comprises two or more types of metal particles including at least Cu, and a polymer that has a polydimethylsiloxane structure, wherein said polydimethylsiloxane structure:
  - i) contains -COOH, -CR<sub>x</sub>(OH)<sub>y</sub>, or -NR<sub>2</sub> as a functional group, where R is selected from H, alkyl, or aryl group, and x+y=3;
  - ii) contains a double bond or
  - iii) has the following structure;



and wherein the conductive adhesive film contains at least one type of flux component selected from alcohol, ketone, carboxylic acid, or amine, wherein the flux component is in a state of phase separation with the polymer that has the polydimethylsiloxane structure.

2. The conductive adhesive film according to Claim 1, wherein the two or more types of metal particles including at least Cu comprises a metal component other than Cu, wherein the metal component has a melting point of 250°C or lower.
3. The conductive adhesive film according to any one of Claims 1 or 2, wherein the metal particles are capable of forming an intermetallic compound.
4. The conductive adhesive film according to any one of Claims 1 to 3, wherein the metal particles amount to 55 volume% or more of the entire film and the polymer

5. The conductive adhesive film according to any one of Claims 1 to 4, which comprises a radical generator with a one-hour half-life temperature of 200°C or higher.
6. A dicing die bonding film, which comprises the conductive adhesive film of any one of Claims 1 to 5 and a dicing tape laminated thereon.
7. A method for processing semiconductor wafer using the conductive adhesive film of any one of Claims 1 to 5.
8. A method for processing semiconductor wafer using the dicing die bonding film of Claim 6.