CLAIMS

1. A bonded body comprising: a bonding layer containing Cu; and a semiconductor element bonded to the bonding layer,

wherein the bonding layer includes an extending portion laterally extending from a peripheral edge of the semiconductor element,

in a cross-sectional view in a thickness direction, the extending portion rises from a peripheral edge of a bottom of the semiconductor element or from a vicinity of the peripheral edge of the bottom of the semiconductor element, and includes a side wall substantially spaced apart from a side of the semiconductor element,

the extending portion has a thickness in the thickness direction of 150 μm or less, and

an average distance between the side wall and the side of the semiconductor element is 1 μm or more.

2. The bonded body according to claim 1,

wherein the bonding layer contains Cu in an amount of 50 mass% or more.

3. The bonded body according to claim 1 or 2,

wherein the semiconductor element contains Si in an amount of 50 mass% or more.

4. The bonded body according to any one of claims 1 to 3,

wherein the extending portion does not include any portion where the side wall and the side of the semiconductor element are in contact with each other.

5. The bonded body according to any one of claims 1 to 4,

wherein the side wall is formed such that a distance between the side wall and the side of the semiconductor element gradually increases from the bottom of the semiconductor element toward an upper side, or is constant.

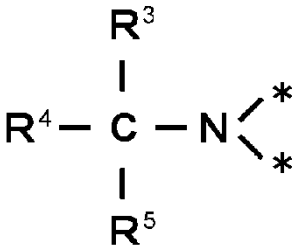
6. The bonded body as forth in any one of claims 1 to 5,

wherein an average distance between the side wall and the side of the semiconductor element is 1 μm or more.

7. The bonded body according to any one of claims 1 to 6,

wherein a structure (3) below is formed in the bonding layer:

[Chem. 1]



(3)

where R^3 to R^5 each independently represent a hydrogen atom, a hydroxyl group, a hydrocarbon group having 1 to 10 carbon atoms, or a hydrocarbon group having 1 to 10 carbon atoms and having a hydroxyl group, and * represents a Cu-binding site.

8. A method for manufacturing the bonded body according to any one of claims 1 to 7, the method comprising:

applying a composition for a bonding layer to a surface of a conductor to form a coating film, wherein the composition contains a metal powder containing Cu and a solid reducing agent;

drying the coating film to form a dried coating film;

then superposing a semiconductor element on the dried coating film to obtain a stack in which the dried coating film is located between the conductor and the semiconductor element, and subsequently heating the stack while applying a pressure thereto to sinter the metal powder to thereby bond the conductor and the semiconductor element together.