ABSTRACT

THIN GOLD ALLOY WIRE FOR BONDING

There are provided a thin gold alloy wire for semiconductor chip bonding which is extremely useful in reducing the size of a semiconductor device and attaining a higher density, as well as a method for manufacturing the same. The thin gold alloy wire essentially consists of the invention's predetermined amounts of elements selected from Pt, Pd, Be, Ge, Ca, La, Y and Eu and the balance being Au and incidental impurity and has an elongation of 3% to 8% and a Young's modulus of 6,800 to 9,000 kgf/mm². Since the thin wire is high in strength in spite of a small diameter, the occurrence of wire breaking during wiring and use is diminished and the deterioration of bonding strength after standing at a high temperature is reduced, so it is possible to suppress the breaking of the wire under vibration. By cooling a molten gold alloy 1 of the composition according to the invention within a crucible from the lower end toward the upper end of the crucible it is made possible to obtain positively and relatively easily a thin gold alloy wire having the aforesaid alloy composition and having an elongation of 3% to 8% and a Young's modulus of 6,800 to 9,000 kgf/mm².

FIGURE 1