

ABSTRACT

Thin Gold-Alloy Wire for Semiconductor Device

This invention provides a thin gold-alloy wire for a semiconductor device capable of improving long term reliability of bonding with an electrode and capable of simultaneously accomplishing reduction of a wire bend and wire flow at the time of resin molding and high looping.

The thin gold-alloy wire contains 50 to 3000 ppm by weight of Mn and the balance comprising gold and unavoidable impurities. Further, the thin gold-alloy wire comprises any of the following combinations ①, ②, ① + ②, ② + ③ and ① + ② + ③ when element groups to be added are classified into the following groups ① to ③ :

- ① 1 to 20 ppm by weight in total of at least one of Be and B;
- ② 1 to 30 ppm by weight in total of at least one of Ca, Sr and rare earth elements; and
- ③ 1 to 50 ppm by weight in total of at least one of In and Tl.

The thin gold-alloy wire according to the present invention has high bonding reliability at the bond portion with the electrode on a semiconductor device and can be packaged with high density semiconductor devices.