

Abstract

Copper–Rhodium Alloy Wire for Connecting Semiconductor Device

To improve a copper alloy ball bonding wire so that aluminum splash and leaning at the time of ultrasonic wave bonding are restricted, and the quality of the bondability at the time of the second bonding is improved.

[Means to solve the problems]

In a metallic matrix comprising a starting copper (Cu) having a purity of 99.995 mass % or higher and rhodium (Rh) in an amount of 0.1 – 1.5 mass %, non-metallic elements sulfur (S) in an amount of 1.0 – 10 mass ppm and oxygen (O) in an amount of 10 – 150 mass ppm are dissolved; then phosphor (P) in an amount of 1 – 10 mass ppm may also be dissolved. The rhodium in the metallic matrix works to restrict the segregation of sulfur in the ball surface and thus the dynamic strength is controlled and, in cooperation with the dissolved oxygen the rhodium restricts the activity of S and thus improves the wire quality in terms of leaning and second bondability.

(No figure to accompany Abstract)