FLIP CHIP METALLIZATON

Abstract:

The specification describes techniques for applying under bump metallization (UBM) for solder bump interconnections on IC chips with Al bonding sites. The UBM of the invention comprises a copper layer applied directly to the aluminum bonding sites. Reliable bonds are obtained if the Al surface is a nascent surface. Such a surface can be provided by back sputtering an aluminum bonding site, or by a freshly sputtered aluminum layer. The copper layer is deposited on the nascent aluminum surface in e.g. a cluster tool without breaking vacuum. The UBM can be patterned using subtractive techniques.