Abstract

SEMICONDUCTOR DEVICE AND METHOD OF FORMING A DUAL UBM STRUCTURE FOR LEAD FREE BUMP CONNECTIONS

A semiconductor device has a substrate with a contact pad. A first insulation layer is formed over the substrate and contact pad. A first under bump metallization (UBM) is formed over the first insulating layer and is electrically connected to the contact pad. A second insulation layer is formed over the first UBM. A second UBM is formed over the second insulation layer after the second insulation layer is cured. The second UBM is electrically connected to the first UBM. The second insulation layer is between and separates portions of the first and second UBMs. A photoresist layer with an opening over the contact pad is formed over the second UBM. A conductive bump material is deposited within the opening in the photoresist layer. The photoresist layer is removed and the conductive bump material is reflowed to form a spherical bump.
(Fig 5l)