ABSTRACT

SEMICONDUCTOR DEVICE AND METHOD OF FORMING PROTECTION AND SUPPORT STRUCTURE FOR CONDUCTIVE INTERCONNECT STRUCTURE

A semiconductor device has a semiconductor wafer with a plurality of contact pads. A first insulating layer is formed over the semiconductor wafer and contact pads. A portion of the first insulating layer is removed, exposing a first portion of the contact pads, while leaving a second portion of the contact pads covered. An under bump metallization layer and a plurality of bumps is formed over the contact pads and the first insulating layer. A second insulating layer is formed over the first insulating layer, a sidewall of the under bump metallization layer, sidewall of the bumps, and upper surface of the bumps. A portion of the second insulating layer covering the upper surface of the bumps is removed, but the second insulating layer is maintained over the sidewall of the bumps and the sidewall of the under bump metallization layer. (Fig. 4)