Abstract

SEMICONDUCTOR DIE AND METHOD OF FORMING THROUGH ORGANIC VIAS HAVING VARYING WIDTH IN PERIPHERAL REGION OF THE DIE

A plurality of semiconductor die is mounted to a carrier separated by a peripheral region. An insulating material is deposited in the peripheral region. A first opening is formed in the insulating material of the peripheral region to a first depth. A second opening is formed in the insulating material of the peripheral region centered over the first opening to a second depth less than the first depth. The first and second openings constitute a composite through organic via (TOV) having a first width in a vertical region of the first opening and a second width in a vertical region of the second opening. The second width is different than the first width. A conductive material is deposited in the composite TOV to form a conductive TOV. An organic solderability preservative (OSP) coating is formed over a contact surface of the conductive TOV.

(Fig. 4)