Abstract

SEMICONDUCTOR DEVICE AND METHOD OF EMBEDDING BUMPS FORMED ON SEMICONDUCTOR DIE INTO PENETRABLE ADHESIVE LAYER TO REDUCE DIE SHIFTING DURING ENCAPSULATION

A semiconductor device has a semiconductor die with a plurality of bumps formed over a surface of the first semiconductor die. A penetrable adhesive layer is formed over a temporary carrier. The adhesive layer can include a plurality of slots. The semiconductor die is mounted to the carrier by embedding the bumps into the penetrable adhesive layer. The semiconductor die and interconnect structure can be separated by a gap. An encapsulant is deposited over the first semiconductor die. The bumps embedded into the penetrable adhesive layer reduce shifting of the first semiconductor die while depositing the encapsulant. The carrier is removed. An interconnect structure is formed over the semiconductor die. The interconnect structure is electrically connected to the bumps. A thermally conductive bump is formed over the semiconductor die, and a heat sink is mounted to the interconnect structure and thermally connected to the thermally conductive bump. (Fig. 4)