

Abstract

SEMICONDUCTOR DEVICE AND METHOD OF BONDING DIFFERENT SIZE SEMICONDUCTOR DIE AT THE WAFER LEVEL

A semiconductor wafer has first and second opposing surfaces. A plurality of conductive vias is formed partially through the first surface of the semiconductor wafer. The semiconductor wafer is singulated into a plurality of first semiconductor die. The first semiconductor die are mounted to a carrier. A second semiconductor die is mounted to the first semiconductor die. A footprint of the second semiconductor die is larger than a footprint of the first semiconductor die. An encapsulant is deposited over the first and second semiconductor die and carrier. The carrier is removed. A portion of the second surface is removed to expose the conductive vias. An interconnect structure is formed over a surface of the first semiconductor die opposite the second semiconductor die. Alternatively, a first encapsulant is deposited over the first semiconductor die and carrier, and a second encapsulant is deposited over the second semiconductor die.

(Fig. 6)