

Abstract

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A semiconductor device has a plurality of first semiconductor die with an encapsulant deposited over a first surface of the first semiconductor die and around the first semiconductor die. An insulating layer is formed over the encapsulant and over a second surface of the first semiconductor die opposite the first surface. The insulating layer includes openings over the first semiconductor die. A first conductive layer is formed over the first semiconductor die within the openings. A second conductive layer is formed over the first conductive layer to form vertical conductive vias. A second semiconductor die is disposed over the first semiconductor die and electrically connected to the first conductive layer. A bump is formed over the second conductive layer outside a footprint of the first semiconductor die. The second semiconductor die is disposed over an active surface or a back surface of the first semiconductor die.

(Fig. 4n)