

Abstract

A semiconductor device has a semiconductor wafer including a plurality of semiconductor die. An insulating layer is formed over the semiconductor wafer. A portion of the insulating layer is removed by LDA to expose a portion of an active surface of the semiconductor die. A first conductive layer is formed over a contact pad on the active surface of the semiconductor die. The semiconductor wafer is singulated to separate the semiconductor die. The semiconductor die is disposed over a carrier with the active surface of the semiconductor die offset from the carrier. An encapsulant is deposited over the semiconductor die and carrier to cover a side of the semiconductor die and the exposed portion of the active surface. An interconnect structure is formed over the first conductive layer. Alternatively, a MUF material is deposited over a side of the semiconductor die and the exposed portion of the active surface.

(Fig.5)