

Abstract

SEMICONDUCTOR DEVICE AND METHOD OF FORMING DUAL-SIDED INTERCONNECT STRUCTURES IN FO-WLCSP

A semiconductor device has a substrate including first and second conductive layers formed over first and second opposing surfaces of the substrate. A plurality of wire studs or stud bumps is formed over the substrate. A semiconductor die is mounted to the substrate between the wire studs. A first encapsulant is deposited around the semiconductor die. A first interconnect structure is formed over the semiconductor die and first encapsulant. A second encapsulant is deposited over the substrate, semiconductor die, and first interconnect structure. The second encapsulant can be formed over a portion of the semiconductor die and side surface of the substrate. A portion of the second encapsulant is removed to expose the substrate and first interconnect structure. A second interconnect structure is formed over the second encapsulant and first interconnect structure and electrically coupled to the wire studs. A discrete semiconductor device can be formed on the interconnect structure.

(Fig.8)