Abstract

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

A semiconductor device has a substrate with first and second conductive layers formed over first and second opposing surfaces of the substrate. A plurality of bumps is formed over the substrate. A semiconductor die is mounted to the substrate between the bumps. An encapsulant is deposited over the substrate and semiconductor die. A portion of the bumps extends out from the encapsulant. A portion of the encapsulant is removed to expose the substrate. An interconnect structure is formed over the encapsulant and semiconductor die and electrically coupled to the bumps. A portion of the substrate can be removed to expose the first or second conductive layer. A portion of the substrate can be removed to expose the bumps. The substrate can be removed and a protection layer formed over the encapsulant and semiconductor die. A semiconductor package is disposed over the substrate and electrically connected to the substrate.

(Fig.5i)