Abstract

SEMICONDUCTOR DEVICE AND METHOD OF FORMING WIRE STUDS AS VERTICAL INTERCONNECT IN FO-WLP

A semiconductor device has a substrate and semiconductor die disposed over a first surface of the substrate. A wire stud is attached to the first surface of the substrate. The wire stud includes a base portion and stem portion. A bonding pad is formed over a second surface of the substrate. An encapsulant is deposited over the substrate, semiconductor die, and wire stud. A portion of the encapsulant is removed by LDA to expose the wire stud. A portion of the encapsulant is removed by LDA to expose the substrate. An interconnect structure is formed over the encapsulant and electrically connected to the wire stud and semiconductor die. A bump is formed over the interconnect structure. A semiconductor package is disposed over the encapsulant and electrically connected to the substrate. A discrete semiconductor device is disposed over the encapsulant and electrically connected to the substrate.
(Fig.5)