Abstract

WAFER LEVEL INTEGRATION PACKAGE

A semiconductor package has a first conductive layer formed on a top surface of a substrate. A conductive via is formed between the first conductive layer and a bottom surface of the substrate. A semiconductor component is mounted to the substrate and electrically connected to the first electrical contact pad. The semiconductor component can be a flip chip semiconductor device, wire bond semiconductor device, or passive component. An encapsulant is deposited over the semiconductor component. The encapsulant extends into a channel formed on a side of the substrate from the top surface to the bottom surface of the substrate. An interconnect structure is formed over the bottom surface of the substrate. A heat spreader structure can be disposed over the semiconductor component. An EMI shield can be disposed over the semiconductor component. A plurality of semiconductor components can be stacked in a package-in-package arrangement.

(Fig. 3)