Abstract

SEMICONDUCTOR DEVICE WITH THIN PROFILE WLCSP WITH VERTICAL INTERCONNECT OVER PACKAGE FOOTPRINT

A semiconductor wafer has a plurality of first semiconductor die. A second semiconductor die is mounted to the first semiconductor die. The active surface of the first semiconductor die is oriented toward an active surface of the second semiconductor die. An encapsulant is deposited over the first and second semiconductor die. A portion of a back surface of the second semiconductor die opposite the active surface is removed. Conductive pillars are formed around the second semiconductor die. TSVs can be formed through the first semiconductor die. An interconnect structure is formed over the back surface of the second semiconductor die, encapsulant, and conductive pillars. The interconnect structure is electrically connected to the conductive pillars. A portion of a back surface of the first semiconductor die opposite the active surface is removed. A heat sink or shielding layer can be formed over the back surface of the first semiconductor die. (Fig.4)