Abstract

SEMICONDUCTOR DEVICE AND METHOD OF FORMING OPEN CAVITY IN TSV INTERPOSER TO CONTAIN SEMICONDUCTOR DIE IN WLCSMP

A semiconductor device is made by mounting a semiconductor wafer to a temporary carrier. A plurality of TSV is formed through the wafer. A cavity is formed partially through the wafer. A first semiconductor die is mounted to a second semiconductor die. The first and second die are mounted to the wafer such that the first die is disposed over the wafer and electrically connected to the TSV and the second die is disposed within the cavity. An encapsulant is deposited over the wafer and first and second die. A portion of the encapsulant is removed to expose a first surface of the first die. A portion of the wafer is removed to expose the TSV and a surface of the second die. The remaining portion of the wafer operates as a TSV interposer for the first and second die. An interconnect structure is formed over the TSV interposer.
(Fig. 4)