

ABSTRACT

STACKED MICROELECTRONIC DEVICES AND METHODS FOR MANUFACTURING MICROELECTRONIC DEVICES

A microelectronic package with at least two known good microelectronic dies or chips stacked on top of each other on a support or interposer both including rewiring on top of each die on the active side of the chip. The rewiring structures are also called redistribution structures. The redistribution structure can include both ball arrays, bga and peripheral terminals rerouted from terminals situated at the centre of the chips on the active side them. The peripheral terminals can either be used for wire bonding. A casing in form of an encapsulation is provided over the stacked chips. The redistribution layout of ball pads and peripheral contacts enables a third chip to be flip chip bonded on top of the first two stacked chips. The support can function as an interposer when provided with contacts on both sides. This together with the redistribution structure enables bonding of two microelectronic stacked packages each including two stacked chips and an interposer on top of each other.

The two chips can either be bonded with the active side of both chip facing upwards or the first chip can be flip chip bonded with the active side facing the support. In the first case both chips are wire bonded to the support and a standoff can be included between the chips, in the second case only the second chip is wire bonded to the support.

Figure 3A