

SEMICONDUCTOR ASSEMBLIES, STACKED SEMICONDUCTOR
DEVICES, AND METHODS OF MANUFACTURING
SEMICONDUCTOR ASSEMBLIES AND STACKED
SEMICONDUCTOR DEVICES

ABSTRACT OF THE DISCLOSURE

Stacked semiconductor devices, semiconductor assemblies, methods of manufacturing stacked semiconductor devices, and methods of manufacturing semiconductor assemblies. One embodiment of a semiconductor assembly (100) comprises a thinned semiconductor wafer (110) having an active side releaseably attached to a temporary carrier (130), a back side, and a plurality of first dies at the active side. The individual first dies have an integrated circuit, first through die interconnects (125) electrically connected to the integrated circuit, and interconnect contacts (126) exposed at the back side of the wafer. The assembly further includes a plurality of separate second dies having their front side attached to the back side of corresponding first dies, wherein the individual second dies have integrated circuits, through die interconnects (147) electrically connected to the integrated circuits and contact points (148) at a back side, and wherein the individual second dies have a thickness of approximately less than 100 microns.

Figure 1