METHODS OF FORMING THROUGH-WAFER INTERCONNECTS AND STRUCTURES RESULTING THEREFROM

ABSTRACT

Methods for forming conductive vias or through-wafer interconnects in semiconductor substrates and resulting through wafer interconnect structures are disclosed. In one embodiment of the present invention, a method of forming a through wafer interconnect structure includes the acts of forming an aperture in a first surface of a substrate, depositing a first insulative or dielectric layer on an inner surface of the aperture, depositing an electrically conductive layer over the first dielectric layer, depositing a second insulative or dielectric layer on the inner surface of the aperture over the electrically conductive material, and exposing a portion of the electrically conductive layer through the second, opposing surface of the substrate. Semiconductor devices including through-wafer interconnects produced with the methods of the instant invention are also described.

FIG. 8