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(54) Title: BACKSIDE POWER RAIL TO DEEP VIAS

700

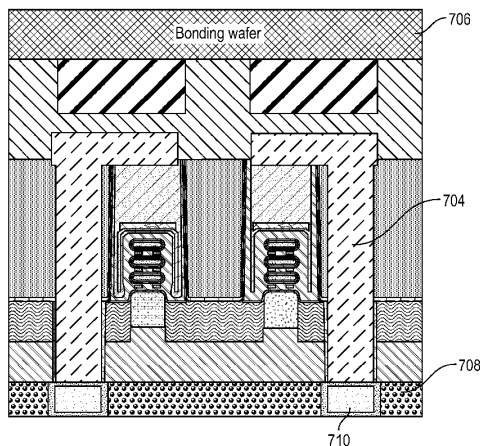


FIG. 7D

(57) Abstract: Semiconductor devices and methods of manufacturing the same are described. Transistors are fabricated using a standard process flow. A via opening extending from the top surface of the substrate to a bottom surface of the wafer device is formed, thus allowing nano TSV for high density packaging, as well as connecting the device to the backside power rail. A metal is deposited in the via opening, and the bottom surface of the wafer device is bound to a bonding wafer. The substrate is optionally thinned, and a contact electrically connected to the metal is formed.

[Continued on next page]

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