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VOLCANO DEFECT-FREE TUNGSTEN PLUG

ABSTRACT

A new method of metallization using a tungsten plug is described. Semiconductor device structures are provided in and on a semiconductor substrate. An insulating layer covers the semiconductor device structures wherein a contact opening is made through the insulating layer to the semiconductor substrate. A barrier layer is deposited conformally over the surface of the insulating layer and within the contact opening. A stress buffer layer is deposited overlying the barrier layer wherein the stress buffer layer prevents volcano defects. A tungsten plug is formed within the contact opening to complete the formation of the tungsten plug metallization without volcano defects in the fabrication of an integrated circuit device.

(FIGURE 3 IS SUGGESTED FOR PUBLICATION)

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