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(54) Title: ISOTHERMAL TRANSISTOR STRUCTURES

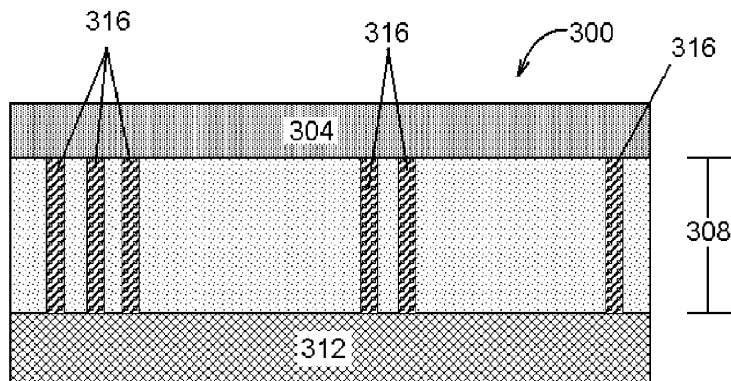


Fig. 6

(57) Abstract: A novel isothermal transistor structure and method of forming the isothermal transistor structure is disclosed that enables isothermal operation of two or more transistors which are in thermal proximity to one another. The structure includes at least two transistors which are manufactured in a middle of line or back end of line process and includes a layer of thermally conductive material which is thermally adjacent to the at least two transistors and which dissipates heat from the at least two transistors. The isothermal structures can be formed over MOS circuitry formed conventionally by front end of line processes or can be formed over other layers of transistors which are manufactured in a middle of line or back end of line processes. In one embodiment, the isothermal structures are formed on the side of a semiconductor die opposite the side on which the conventional MOS circuitry is formed and the isothermal structures are connected to the MOS circuitry through vias.

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