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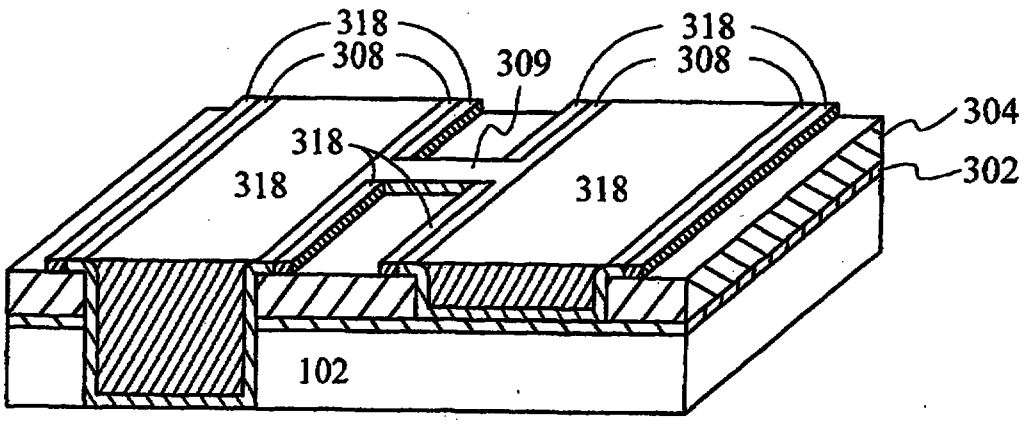
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(54) Title: FABRICATION PROCESS FOR DISHING-FREE CU DAMASCENE STRUCTURES




(57) Abstract: Fabrication of copper damascene interconnects includes depositing an oxide layer (304) atop an underlying conductive layer (102) such as a substrate or a metal layer, which is then patterned and etched. A barrier layer (308) having an optional copper seed layer is then deposited atop the patterned oxide layer (304). The barrier layer (308) is patterned and etched to remove some of the barrier material. Copper (318) is plated atop the barrier layer (308). CMP polishing is performed to bring the copper layer (318) to the level of the barrier layer (308). Polishing is continued to further polish down the barrier layer (308) and any remaining copper (318) to the level of the oxide layer (304). The result is a dishing-free copper damascene structure.

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