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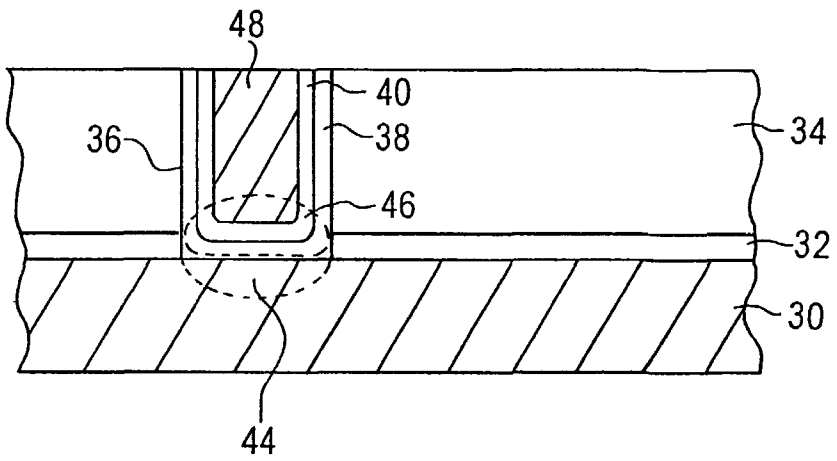
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(54) Title: A METHOD OF SELECTIVELY ALLOYING INTERCONNECT REGIONS BY DEPOSTION PROCESS



(57) Abstract: A metal interconnect structure and method for making the same provides an alloying element layer (38) that lines a via (36) in a dielectric layer (34). The alloying element layer (38) is therefore inserted at a critical electromigration failure site, i.e., at the fast diffusion site below the via (36) in the underlying metal (30). Once the copper fill is performed in the via (36), an annealing step allows the alloying element to go into solid solution with the copper (30) in and around the via (36). The solid solution of the alloying element and copper at the bottom of the via (36) in the copper line (30) improves the electromigration reliability of the structure.

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