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PREVENTING PLASMA INDUCED DAMAGE RESULTING FROM HIGH DENSITY PLASMA DEPOSITION

ABSTRACT OF THE INVENTION

A method and apparatus for preventing plasma induced damage resulting from high density plasma deposition processes. In the present embodiment, Un-doped Silica Glass(USG) is deposited so as to form a USG liner. In the present embodiment, the USG liner directly overlies a conductive interconnect structure that couples to semiconductor devices that are susceptible to plasma-induced damage during high density plasma deposition processes. A silicon-rich oxide is deposited in-situ immediately following the deposition of the USG liner so as to form a silicon-rich oxide liner that directly overlies the USG liner. The silicon-rich oxide liner protects the interconnect structure during the subsequent high density plasma deposition process, preventing damage resulting from plasma charge to the interconnect structure.

FIGURE 2



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