METHOD FOR ETCHING A SILICIDED POLY USING FLUORINE-BASED REACTIVE ION ETCHING AND SODIUM HYDROXIDE BASED SOLUTION IMMERSION

ABSTRACT OF THE INVENTION

A method for removing a silicide poly on an integrated circuit (IC) chip. Specifically, one embodiment of the present invention discloses a method for exposing a gate oxide layer with a fluorine based reactive ion etching (F-based RIE) process and immersion in a sodium hydroxide based solution. The F-based RIE damages a silicide layer that covers a polysilicon gate layer. Damage to the silicide layer allows for penetration of chemicals to a polysilicon gate layer. Immersion of the IC chip in the sodium hydroxide based solution etches away the polysilicon gate layer and lifts off the silicide layer without altering an underlying gate oxide layer. Also, another embodiment uses a solution including sodium hydroxide and sodium chloride. As such, failure analysis of the gate oxide layer can proceed without concern for damage due to the removal process.

FIGURE 5B



162162



G00002