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(54) Title: METHOD OF RAPID THERMAL PROCESSING (RTP) OF ION IMPLANTED SILICON

(57) Abstract

A method for rapid thermal processing (RTP) of a silicon substrate, the substrate having a surface with a plurality of areas implanted with dopant ions, comprising (a) contacting the surface with a reactive gas, (b) processing the substrate for a first process time and temperature sufficient to produce a significant protective layer upon the surface, and (c) annealing the substrate for a second process time and temperature sufficient to activate the dopant material so that the sheet resistivity of the implanted areas is less than 500 ohms/square, where the first and second processing time and temperature are insufficient to move the implanted dopant ions to a depth of more than 80 nanometers from the surface.

