ABSTRACT

A DUAL GATE OXIDE PROCESS WITH REDUCED THERMAL DISTRIBUTION OF THIN-GATE CHANNEL IMPLANT PROFILES DUE TO THICK-GATE OXIDE

A new method is provided for the creation of layers of gate oxide of different thicknesses. A substrate is provided, the surface of the substrate is divided into a first surface region over which a thick layer of gate oxide has to be created and a second surface region over which a thin layer of gate oxide is to be created. Thick gate-oxide implants are performed into the surface of the substrate. A thick layer of gate oxide is created over the surface of the substrate, the thick layer of gate oxide is successively patterned for thin gate-oxide implants, comprising thin gate-oxide n-well/p-well, threshold, punchthrough implants, into the second surface region of the substrate. The thick layer of gate oxide is removed from the second surface region of the substrate. The (now contaminated) top layer of the thick layer of gate oxide is removed, a thin layer of gate oxide is grown over the second surface region of the substrate.

FIGURE 2



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