OPTIMISED REACHINGTHROUGH IMPLANT FOR SIMULTANEOUSLY FORMING AN MOS CAPACITOR

ABSTRACT

A method of forming a diffusion region in a silicon substrate having low-resistance, acceptable defect density, reliability and process control including the steps of: (a) subjecting a silicon substrate (10) to a first ion implantation step, said first ion implantation step being conducted under conditions such that a region of amorphized Si (16) is formed in said silicon substrate (10); (b) subjecting said silicon substrate (10) containing said region of amorphized Si (16) to a second ion implantation step, said second ion implantation step being carried out by implanting a dopant ion into said silicon substrate (10) under conditions such that the peak of implant of said dopant ion is within the region of amorphized Si (16) is re-crystallized thereby forming a diffusion region (18) in said silicon substrate (10) is provided.

FIG 3c