ABSTRACT

The present invention provides a SIMOX substrate produced by employing an oxygen ion implantation amount in a low dose range, which substrate is a high quality SOI substrate having an increased thickness of a BOX layer, and a method of producing the same, and more specifically, provides a method of producing a SIMOX substrate wherein a buried oxide layer and a surface silicon layer are formed by applying the implantation of oxygen ions in a silicon substrate and a high temperature heat treatment thereafter, characterized by: forming the buried oxide layer through applying a high temperature heat treatment after an oxygen ion implantation; then applying an additional oxygen ion implantation so that the peak position of the distribution of implanted oxygen is located at a portion lower than the interface between the buried oxide layer, already formed, and the substrate thereunder; and then applying another high temperature heat treatment, and a SIMOX substrate produced by said method having a surface silicon layer 10 to 400 nm in thickness and a buried oxide layer 60 to 250 nm in thickness.



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