ABSTRACT

MANUFACTURING METHOD OF SOI WAFER AND SOI WAFER MANUFACTURED BY THIS METHOD

There is provided a method of manufacturing an SOI wafer by an ion implantation delamination method, comprising at least: forming an oxide film on a surface of at least one of a base wafer and a bond wafer functioning as an SOI layer; implanting at least one of a hydrogen ion and a rare gas ion from a surface of the bond wafer to form an ion implanted layer; subsequently bringing the bond wafer into close contact with the base wafer via the oxide film; performing a heat treatment to cause delamination in the ion implanted layer so that the SOI layer is formed; then conducing a heat treatment in an oxidizing atmosphere to form an oxide film on the surface of the SOI layer; subsequently removing the oxide film by etching; then cleaning the surface of the SOI layer by using ozone water; and polishing the same. As a result, in an ion implantation delamination method, a method of manufacturing a high-quality SOI wafer which can remove a damaged layer and surface roughness remaining on the SOI layer surface after delamination while maintaining film thickness uniformity of the SOI layer is provided.