METHOD FOR MANUFACTURING SOI SUBSTRATE

ABSTRACT OF THE DISCLOSURE

The present invention provides a method for manufacturing an SOI substrate, to improve planarity of a surface of a single crystal semiconductor layer after separation by favorably separating a single crystal semiconductor substrate even in the case where a non-mass-separation type ion irradiation method is used, and to improve planarity of a surface of a single crystal semiconductor layer after separation as well as to improve throughput. The method includes the steps of irradiating a single crystal semiconductor substrate with accelerated ions by an ion doping method while the single crystal semiconductor substrate is cooled to form an embrittled region in the single crystal semiconductor substrate; bonding the single crystal semiconductor substrate and a base substrate with an insulating layer interposed therebetween; and separating the single crystal semiconductor substrate along the embrittled region to form a single crystal semiconductor layer over the base substrate with the insulating layer interposed therebetween.

Figure 1A-3