MANUFACTURING METHOD OF SEMICONDUCTOR SUBSTRATE AND SEMICONDUCTOR DEVICE

ABSTRACT OF THE DISCLOSURE

To provide a semiconductor substrate in which a semiconductor element having favorable crystallinity and high performance can be formed. A single crystal semiconductor substrate having an embrittlement layer and a base substrate are bonded with an insulating layer interposed therebetween; the single crystal semiconductor substrate is separated along the embrittlement layer by heat treatment; a single crystal semiconductor layer is fixed to the base substrate; the single crystal semiconductor layer is irradiated with a laser beam; the single crystal semiconductor layer is in a partially melted state to be recrystallized; and crystal defects are repaired. In addition, the energy density of a laser beam with which the best crystallinity of the single crystal semiconductor layer is obtained is detected by a microwave photoconductivity decay method.

Figure 1