

SEMICONDUCTOR SUBSTRATE, SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD OF SEMICONDUCTOR SUBSTRATE

Abstract

5 A semiconductor substrate, a semiconductor device and a manufacturing method of
the semiconductor substrate are provided. The semiconductor substrate (1) comprises a
first semiconductor layer (11) and a second semiconductor layer (12) located on the first
semiconductor layer. The first semiconductor layer and the second semiconductor layer,
as well as semiconductor layers obtained by symmetrically rotating the first
10 semiconductor layer and the second semiconductor layer according to their respective
lattice structures, have different cleavage planes in a vertical direction. By providing the
semiconductor substrates having composite structures, even if thicknesses of the
substrates are not changed, the damages to the semiconductor substrates due to stresses by
the semiconductor epitaxial layers can be reduced, thereby decreasing the likelihood of
15 breakage of the semiconductor substrates. Furthermore, the processing difficulty is
reduced and the reliability of the semiconductor devices is improved.

FIG. 1