Abstract

Silicon Single Crystal Substrate and Method of Manufacturing the Same

To provide a silicon single crystal substrate having uniform resistance in the substrate, less BMDs in a surface layer of the substrate, and moderate BMDs in a center of thickness of the substrate.

A silicon single crystal substrate is formed by slicing a silicon single crystal grown with a Czochralski method, the substrate having the following characteristics. The resistivity in a center of a first main surface of the silicon single crystal substrate is not lower than 50 Ω•cm and a rate of change in resistivity in the first main surface is not higher than 3%. The average density of oxygen precipitates bulk micro defects in a region lying between the first main surface and a plane at a depth of 50 μm is lower than 1×10^8 /cm^3. The average density of oxygen precipitates bulk micro defects in a region lying between a plane at a depth of 300 μm and a plane at a depth of 400 μm from the first main surface is not lower than 1×10^8 /cm^3 and not higher than 1×10^9 /cm^3.

Fig. 1