



ABSTRACT

The present invention provides a silicon single crystal wafer having a diameter of 300 mm or more and having a defect-free layer containing no COP for a depth of 3 μm or more from a surface and a method for producing a silicon single crystal, wherein, when a silicon single crystal having a diameter of 300 mm or more is pulled with nitrogen doping by the CZ method, the crystal is grown with a value of V/G [mm^2/K•min] of 0.17 or less, where V [mm/min] is a pulling rate, and G [K/mm] is an average of temperature gradient in the crystal along a pulling axis from the melting point of silicon to 1400°C. Thus, there are established conditions for pulling a silicon single crystal and conditions for heat treatment of wafer for obtaining a silicon single crystal wafer having a defect-free layer free from COP for a sufficient depth of the surface layer by pulling a silicon single crystal having a diameter of 300 mm or more, processing the crystal into wafers and subjecting the wafers to the heat treatment.