

Abstract

**Process for producing a semiconductor wafer of single-crystal silicon,
apparatus for producing a semiconductor wafer of single-crystal silicon and
semiconductor wafer of single-crystal silicon**

The invention relates to a process for producing a semiconductor wafer of single-crystal silicon, to an apparatus for performing the process and to a semiconductor wafer of single-crystal silicon which comprises oxygen and at least one n-type dopant.

The process comprises providing a melt of silicon which comprises n-type dopant in a quartz crucible, wherein the melt has an initial height h_M ;

heating the melt from the side by selectively supplying heat to an upper volume of the melt having an initial height h_m , wherein the height h_m is smaller than the height h_M ;

pulling a single crystal of silicon from the melt by the CZ method with a pulling velocity

V ;

heating the melt from above in the region of a phase boundary between the growing single crystal and the melt;

heating the melt from above in the region of a surface of the melt;

subjecting the melt to a magnetic field;

counterdoping the melt with p-type dopant; and

separating the semiconductor wafer of single-crystal silicon from the single crystal.

Drawing relating to abstract: Fig.1