

Abstract**Method of producing an epitaxially coated semiconductor wafer of monocrystalline silicon**

5 A method of producing an epitaxially coated semiconductor wafer of monocrystalline silicon, comprising: providing a melt of silicon in a crucible; pulling a single crystal of silicon from a surface of the melt with a pulling speed v by the CZ method, wherein oxygen and boron are incorporated into the single crystal and the concentration of oxygen in the single crystal is not less than 6.4×10^{17} atoms/cm³ and not more than 8.0×10^{17} atoms/cm³, and the resistivity of the
10 single crystal is not less than 10 mΩcm and not more than 25 mΩcm, and wherein the melt is not doped with nitrogen and/or carbon; applying a CUSP magnetic field to the melt during the pulling of the single crystal of silicon, surrounded by a heat shield; controlling the pulling speed v and an axial
15 temperature gradient G at the phase boundary between the single crystal and the melt, in such a way that the quotient v/G is not less than 0.13 mm²/°C min and not more than 0.20 mm²/°C min; heating the single crystal by means of an annular heater which is disposed above the melt and surrounds the single crystal; producing a substrate wafer of monocrystalline silicon with a polished
20 lateral surface by processing the single crystal of silicon; and depositing an epitaxial layer of silicon on the polished lateral surface of the substrate wafer, wherein the depositing of the epitaxial layer is the first heat treatment in the course of which the substrate wafer is heated to a temperature of not less than 700°C.

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[Fig. 1]