

Abstract

Epitaxially coated silicon wafer and method for producing
epitaxially coated silicon wafers

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The invention relates to a method for producing epitaxially coated silicon wafers, in which a multiplicity of silicon wafers which are polished at least on their front sides are
10 provided and successively coated individually in each case in an epitaxy reactor by a procedure in which a respective one of the silicon wafers provided is placed on a susceptor in the epitaxy reactor, is pretreated under hydrogen atmosphere in a first step and with addition of an etching medium to the
15 hydrogen atmosphere in a second step, is subsequently coated epitaxially on its polished front side and is removed from the epitaxy reactor, and afterward the susceptor is heated in each case to a temperature of at least 1000°C under a hydrogen atmosphere, and furthermore an etching treatment of the
20 susceptor and a momentary coating of the susceptor with silicon are effected in each case after a specific number of epitaxial coatings.

The invention also relates to a silicon wafer having a front
25 side and a rear side, at least the front side being polished and an epitaxial layer being applied on its front side, characterized by a parameter R_{30-1} mm of -10 nm to $+10$ nm, corresponding to a deviation - determined at a distance of 1 mm from the edge of the silicon wafer - of an average cross
30 section determined by thickness measurement with respect to a reference line determined by regression.

Figure 6.