Abstract

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

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 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 a hydrogen atmosphere in a first step and with addition of an etching medium to the hydrogen atmosphere in a second step, is subsequently coated epitaxially on its polished front side and is removed from the epitaxy reactor, wherein an etching treatment of the susceptor is effected in each case after a specific number of epitaxial coatings and the susceptor is hydrophilized after said etching treatment.

Furthermore, the invention relates to a silicon wafer having a front side and a rear side, at least its front side being polished and an epitaxial layer being applied at least on its front side, and which has a maximum local flatness value $SFQR_{max}$ of 0.01 µm to 0.035 µm relative to at least 99% of the partial regions of an area grid of measurement windows having a size of 26×8 mm^2 on the front side of the coated silicon wafer and an edge exclusion of 2 mm.

Figure 7.