

Title (en)

SOLAR CELL AND METHOD FOR PRODUCING A SOLAR CELL FROM A SILICON SUBSTRATE

Title (de)

SOLARZELLE UND VERFAHREN ZUR HERSTELLUNG EINER SOLARZELLE AUS EINEM SILIZIUMSUBSTRAT

Title (fr)

CELLULE SOLAIRE ET PROCÉDÉ DE FABRICATION D'UNE CELLULE SOLAIRE À PARTIR D'UN SUBSTRAT DE SILICIUM

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2010081505A2] The invention relates to a method for producing a solar cell having a front and a rear side from a silicon substrate (1), in particular a silicon wafer, comprising the following process steps: A) texturizing at least one side of the silicon substrate (1) for improving the absorption when the solar cell is exposed to electromagnetic radiation and/or removing saw damage at at least one side of the silicon substrate (1); B) generating at least one emitter area (2) at least at partial areas of at least one side of the silicon substrate (1) by diffusing in at least one doping material for forming at least one pn transition; C) removing a glass layer on at least one side of the silicon substrate (1), wherein the glass substrate comprises the doping material; D) applying a masking layer (3) at least on a partial area of at least one side of the silicon substrate (1), wherein the masking layer (3) is a dielectric layer; E) removing at least one part of the material of the silicon substrate (1) at at least one side of the silicon substrate (1) and/or conditioning at least one side of the silicon substrate (1); F) applying metal structures (5, 6) to the front side (1a) and/or rear side (1b) of the silicon substrate (1) for electrically contacting the solar cell. It is significant that thermal oxidation is performed in a process step E2 between the process steps E and F for forming an oxide layer (4) at least in a partial area of the front and/or rear side of the silicon substrate (1) not covered by the masking layer (3) applied in step D, and that the marking layer (3) and the oxide layer (4) substantially remain on the silicon substrate (1) in the subsequent process steps.

IPC 8 full level

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