

Title (en)

PHOTOVOLTAIC SOLAR CELL AND METHOD FOR PRODUCING A PHOTOVOLTAIC SOLAR CELL

Title (de)

PHOTOVOLTAISCHE SOLARZELLE UND VERFAHREN ZUM HERSTELLEN EINER PHOTOVOLTAISCHEN SOLARZELLE

Title (fr)

CELLULE SOLAIRE PHOTOVOLTAÏQUE ET PROCÉDÉ DE FABRICATION D'UNE CELLULE SOLAIRE PHOTOVOLTAÏQUE

Publication

EP 2898538 A1 20150729 (DE)

Application

EP 13762469 A 20130912

Priority

- DE 102012217078 A 20120921
- EP 2013068940 W 20130912

Abstract (en)

[origin: WO2014044597A1] The invention relates to a photovoltaic solar cell with a front face designed for coupling light, comprising at least one recess (4) extending from the front face to the rear face in the semiconductor substrate (1) of a base doping type, at least one metal through-conduction structure (10), wherein the through-conduction structure (10) is guided in the recess (4) from the front face to the rear face of the semiconductor substrate and is connected in an electrically conductive manner to the metal front face contact structure (9), which is connected in an electrically conductive manner to an emitter region (2) of the opposite doping to the base doping type, formed on the front face, and at least one rear face contact structure (7), which is connected to the through-conduction structure (10) in an electrically conductive manner and is arranged on the electrically isolating isolation layer (6) on the rear face and covers the isolation layer at least in the regions surrounding the recess (4), and therefore the rear face contact structure (7) is electrically isolated by the isolation layer (6) against the semiconductor substrate (1) lying beneath the isolation layer (6). It is essential that the through-conduction structure (10) directly adjoins a base region of the base doping type on the walls of the recess (4) in the semiconductor substrate (1). The invention further relates to a method for producing a photovoltaic solar cell.

IPC 8 full level

H01L 31/0224 (2006.01); **H01L 31/068** (2012.01); **H01L 31/18** (2006.01)

CPC (source: CN EP US)

H01L 31/02008 (2013.01 - US); **H01L 31/02167** (2013.01 - CN EP US); **H01L 31/02245** (2013.01 - CN EP US); **H01L 31/02363** (2013.01 - US); **H01L 31/068** (2013.01 - CN EP US); **H01L 31/1804** (2013.01 - CN EP US); **Y02E 10/547** (2013.01 - EP US); **Y02P 70/50** (2015.11 - EP US)

Citation (search report)

See references of WO 2014044597A1

Citation (examination)

- WO 2012031608 A1 20120315 - RENA GMBH [DE], et al
- WO 2011105907 A1 20110901 - STICHTING ENERGIE [NL], et al

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2014044597 A1 20140327; CN 104685638 A 20150603; DE 102012217078 A1 20140327; DE 102012217078 B4 20150305; EP 2898538 A1 20150729; IL 237607 A0 20150430; US 2015243804 A1 20150827

DOCDB simple family (application)

EP 2013068940 W 20130912; CN 201380049018 A 20130912; DE 102012217078 A 20120921; EP 13762469 A 20130912; IL 23760715 A 20150308; US 201314430025 A 20130912