US008647911B2

(12) **United States Patent**
Smith

(10) **Patent No.: US 8,647,911 B2**
(45) **Date of Patent: Feb. 11, 2014**

(54) **BACKSIDE CONTACT SOLAR CELL WITH FORMED POLYSILICON DOPED REGIONS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/547,405**

(22) Filed: **Jul. 12, 2012**

(65) **Prior Publication Data**

US 2012/0276685 A1 Nov. 1, 2012

Related U.S. Application Data

(62) Division of application No. 12/626,483, filed on Nov. 25, 2009, now Pat. No. 8,242,354.

(60) Provisional application No. 61/119,955, filed on Dec. 4, 2008.

(51) **Int. Cl.**
H01L 31/18 (2006.01)

(52) **U.S. Cl.**
USPC **438/57**; 438/71; 438/97; 438/558; 136/257

(58) **Field of Classification Search**
USPC 438/530, 532, 535, 548, 558, 560, 561, 438/564
See application file for complete search history.

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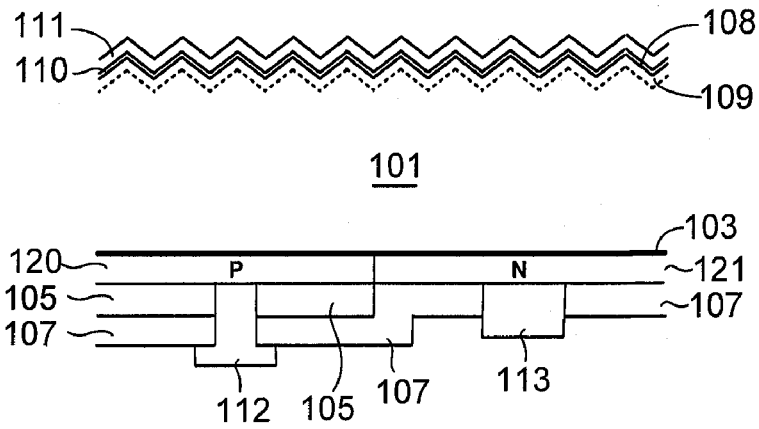
(57) **ABSTRACT**

A solar cell includes abutting P-type and N-type doped regions in a contiguous portion of a polysilicon layer. The polysilicon layer may be formed on a thin dielectric layer, which is formed on a backside of a solar cell substrate (e.g., silicon wafer). The polysilicon layer has a relatively large average grain size to reduce or eliminate recombination in a space charge region between the P-type and N-type doped regions, thereby increasing efficiency.

17 Claims, 5 Drawing Sheets