

ABSTRACT

PROCESS AND STRUCTURES FOR FABRICATION OF SOLAR CELLS

A solar cell is disclosed. The solar cell comprises a plurality of P-type diffusion regions and a plurality of N-type diffusion regions; a P-type metal contact that is electrically coupled to the P-type diffusion regions; an N-type metal contact that is electrically coupled to the N-type diffusion regions and is directly over a P-type diffusion region; a first dielectric layer over the plurality of P-type diffusion regions and N-type diffusion regions, the first dielectric layer comprising contact holes that expose the N-type diffusion regions but not the P-type diffusion regions, where the N-type metal contact is being electrically coupled to the N-type diffusion regions through the contact holes; and a second dielectric layer between the N-type metal contact and the first dielectric layer, where the second dielectric layer is being disposed between two adjacent contact holes of the first dielectric layer.

[FIG. 13]