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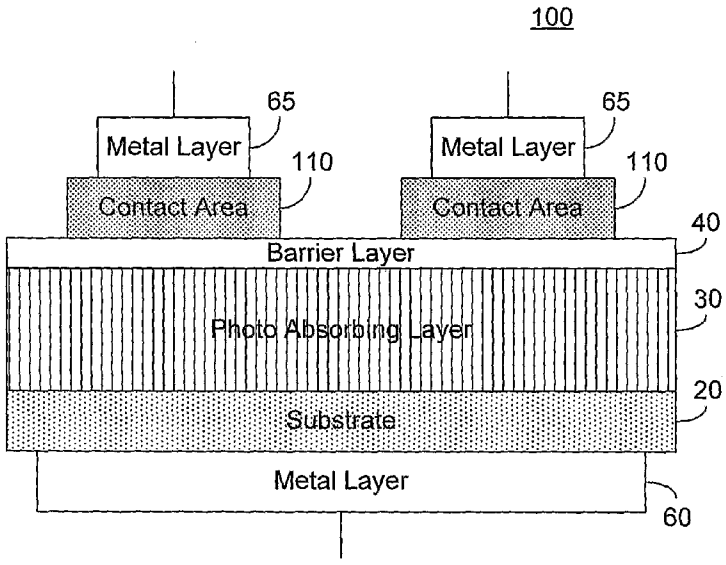
(54) Title: REDUCED DARK CURRENT PHOTODETECTOR



(57) Abstract: A photo-detector comprising: a photo absorbing layer comprising n-doped semiconductor exhibiting valence band energy level; a barrier layer, a first side of the barrier layer adjacent a first side of the photo absorbing layer, the barrier layer exhibiting a valence band energy level substantially equal to the valence band energy level of the doped semiconductor of the photo absorbing layer; and a contact area comprising doped semiconductor, the contact area being adjacent a second side of the barrier layer opposing the first side, the barrier layer exhibiting a thickness and a conductance band gap sufficient to prevent tunneling of majority carriers from the photo absorbing layer to the contact area and block the flow of thermalized majority carriers from the photo absorbing layer to the contact area. Alternatively, a p-doped semiconductor is utilized, and conductance band energy levels of the barrier and photo absorbing layers are equalized.

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