ABSTRACT

A solar cell wherein a passivation film is formed on a crystalline silicon substrate that has at least a p-n junction, and an electrode is formed by printing and heat-treating a conductive paste. Said solar cell has: a first electrode comprising an extraction electrode, which extracts photogenerated carriers from the silicon substrate, formed so as to contact the silicon substrate; and a second electrode comprising a collector electrode, which collects the carriers collected at the extraction electrode, formed so as to contact the first electrode. Other than the point of contact between the first electrode and the second electrode, at least, the second electrode contacts the silicon substrate only partially or not at all. By leaving the passivation film between the collector electrode and the silicon, either completely or partially, the present invention reduces charge losses at electrode/silicon interfaces, improves the short-circuit current and open voltage, and yields a solar cell with improved characteristics. Furthermore, the process can be implemented using existing screen-printing technology or the like, which is extremely effective in reducing costs.