connected to a second bus bar electrode of the plurality of bus bar electrodes extending parallel with the first bus bar electrode, and wherein on each of the first and second bus bar electrodes: all of the plurality of finger electrodes are connected via 2 auxiliary electrodes, such that each one of the 2 auxiliary electrodes is provided at each longitudinal ends of the plurality of finger electrodes, at positions other than the longitudinal ends of the plurality of finger electrodes, all adjacent finger electrodes are connected via 4 to 10 additional auxiliary electrodes, and at least 2 additional auxiliary electrodes of the 4 to 10 additional auxiliary electrodes are provided between the longitudinal ends of the finger electrodes and the bus bar electrode to which they are connected, whereby any one finger electrode of the plurality of finger electrodes in each of the first and second groups of finger electrodes is electrically connected to its respective bus bar electrode of the plurality of bus bar electrodes via one of the 2 auxiliary electrodes or one of the 4 to 10 additional auxiliary electrodes and at least one finger electrode in the same group of finger electrodes, respectively.

CLAIMS:

1. A solar cell comprising a semiconductor substrate having at least a pn junction formed therein, a plurality of finger electrodes which are formed in comb shape on at least one surface of the semiconductor substrate, and a plurality of bus bar electrodes which extend orthogonal to the longitudinal direction of the finger electrodes and are connected to the finger electrodes, wherein

each finger electrode of the plurality of finger electrodes projects from the bus bar electrode to which they are connected, in both directions orthogonal to the bus bar electrode, and a first group of finger electrodes of the plurality of finger electrodes which are connected to a first bus bar electrode of the plurality of bus bar electrodes are spaced apart from second group of finger electrodes of the plurality of finger electrodes which are connected to a second bus bar electrode of the plurality of bus bar electrodes extending parallel with the first bus bar electrode, and

wherein on each of the first and second bus bar electrodes:

all of the plurality of finger electrodes are connected via 2 auxiliary electrodes, such that each one of the 2 auxiliary electrodes is provided at each longitudinal ends of the plurality of finger electrodes, at positions other than the longitudinal ends of the plurality of finger electrodes, all adjacent finger electrodes

are connected via 4 to 10 additional auxiliary electrodes, and at least 2 additional auxiliary electrodes of the 4 to 10 additional auxiliary electrodes are provided between the longitudinal ends of the finger electrodes and the bus bar electrode to which they are connected,

whereby any one finger electrode of the plurality of finger electrodes in each of the first and second groups of finger electrodes is electrically connected to its respective bus bar electrode of the plurality of bus bar electrodes via one of the 2 auxiliary electrodes or one of the 4 to 10 additional auxiliary electrodes and at least one finger electrode in the same group of finger electrodes, respectively.

2. The solar cell of claim 1, wherein the at least 2 additional auxiliary electrodes of the 4 to 10 additional auxiliary electrodes are equally spaced between the longitudinal ends of the finger electrodes of each group of the plurality of finger electrodes and the bus bar electrode to which the finger electrodes are connected.

3. The solar cell of claim 1, wherein the at least 2 additional auxiliary electrodes of the 4 to 10 additional auxiliary electrodes are provided in a region that is deviated from an intermediate point between the longitudinal ends of the finger electrodes of each group of the plurality of finger electrodes and the bus bar electrode to which the finger electrodes are connected, toward the longitudinal ends of the finger electrodes.

4. The solar cell of claim 1, wherein the at least 2 additional auxiliary electrodes of the 4 to 10 additional auxiliary electrodes are provided in a region that extends within a distance of L/3 from the one of the 2 auxiliary electrodes wherein L is a distance between the auxiliary electrode and the bus bar electrode to which the plurality of the finger electrodes are connected between the longitudinal ends of the finger electrodes of each group of the plurality of finger electrodes and the bus bar electrode to which the finger electrodes are connected.

5. The solar cell of any one of claims 1 to 4 wherein each of the finger electrode of the plurality of finger electrodes has a width of 30 to 120 μm.

6. The solar cell of any one of claims 1 to 5 wherein the auxiliary electrode has a width of 30 to 500 μm.

7. A solar cell module comprising a plurality of solar cells as set forth in any one of claims 1 to 6 wherein their bus bar electrodes are connected in series.

8. A method for manufacturing a solar cell, comprising steps of:

screen printing a conductive paste containing silver powder, glass frit, organic vehicle and organic solvent on a semiconductor substrate at a time using screen printing plate having electrode pattern of a solar cell of any one of claims 1 to 6, and

firing to form bus bar electrodes, finger electrodes, auxiliary electrodes and additional auxiliary electrodes of any one of claims 1 to 6.

9. The method of claim 8 in which the printing direction is set parallel to the finger electrodes and orthogonal to the bus bar electrodes and auxiliary electrodes.