

ABSTRACT

An image sensor including: a semiconductor substrate having a first region and a second region; an isolation region filling an isolation trench that partially penetrates the semiconductor substrate; a plurality of photoelectric conversion regions defined by the isolation region and forming a first hexagonal array on a plane that is parallel to a surface of the semiconductor substrate; and a plurality of microlenses respectively corresponding to the plurality of photoelectric conversion regions, and forming a second hexagonal array on the plane that is parallel to the surface of the semiconductor substrate.

FIG. 3