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(54) **IMAGE SENSOR**

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(57)

ABSTRACT

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An image sensor may include a pixel isolation structure disposed in a semiconductor substrate to define a first pixel region, first and second photoelectric conversion regions disposed in the first pixel region, and a separation structure disposed in the first pixel region, between the first and second photoelectric conversion regions. The pixel isolation structure may include first pixel isolation portions, which are spaced apart from each other in a second direction and extend lengthwise in a first direction, and second pixel isolation portions, which are spaced apart from each other in the first direction and extend lengthwise in the second direction to connect to the first pixel isolation portions. The separation structure may be spaced apart from the pixel isolation structure in the first direction and the second direction, and is at least partly at the same level as the first and second photoelectric conversion regions in a third direction perpendicular to the first direction and the second direction.

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