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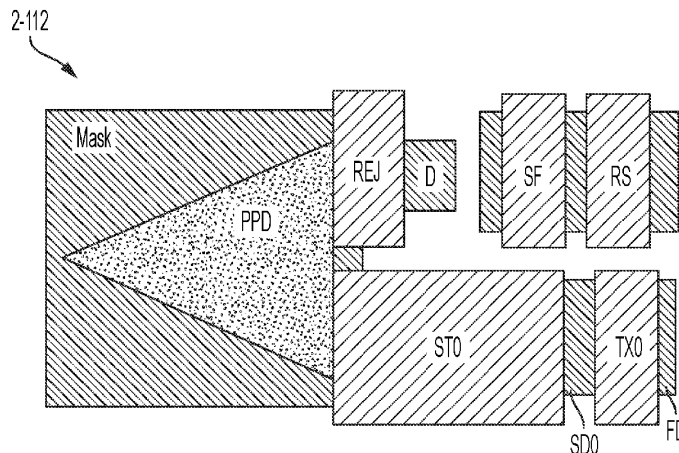


FIG. 2-1

(57) Abstract: Aspects of the technology described herein relate to improved semiconductor-based image sensor designs. In some embodiments, an integrated circuit may comprise a photodetection region and a drain region electrically coupled to the photodetection region, and the photodetection region may be configured to induce an intrinsic electric field in a direction from the photodetection region to the drain region(s). In some embodiments, a charge storage region and the drain region may be positioned on a same side of the photodetection region. In some embodiments, at least one drain layer may be configured to receive incident photons and/or charge carriers via the photodetection region. In some embodiments, an integrated circuit may comprise a plurality of pixels and a control circuit configured to control a transfer of charge carriers in the plurality of pixels.

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