

PHOTODETECTOR

ABSTRACT

5 The present application relates to the technical field of integrated circuits, and in particular
to a photodetector. The photodetector comprises: a waveguide layer; an absorption layer, the
absorption layer being located on the upper surface of the waveguide layer or at least partially
embedded in the waveguide layer; and a cladding material, the cladding material covering the tops
and sidewalls of the waveguide layer and the absorption layer; wherein at least one end face of the
10 photodetector is a light incident surface, and the thickness of the end face of the absorption layer
close to the light incident surface is smaller than the thicknesses of remaining portion. According
to the present application, since the thickness of the end face of the absorption layer close to the
light incident surface is smaller than the thicknesses of the remaining portion, the light energy
absorbed by the portion close to the light incident surface is less than the light energy absorbed by
15 the remaining portion of the absorption layer, thereby reducing the degree of aggregation of
photon-generated carriers in an intrinsic region of the photodetector, increasing the electric field
intensity of a photon-generated carrier aggregation region, reducing the influence of large-light
input on the bandwidth and responsivity performance of the photodetector, and finally improving
a large-light input threshold of the photodetector.

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FIG. 5