

Flexible planar high-frequency cadmium telluride photodiode comprises a semiconductor structure with a photosensitive layer and electrodes for extracting photogenerated charge carriers. Wherein the photodiode comprises a flexible, transparent substrate made of thermally stable polyimide, on the front side of which is a planar thin-film semiconductor structure of n^+ -ITO/i-CdTe/ p^+ -ZnTe. A layer of cadmium sulfide is positioned between the polyimide substrate and the i-CdTe photosensitive layer, and a layer of undoped zinc oxide is positioned between the i-CdTe photosensitive layer and the n^+ -ITO layer. The polyimide substrate is 7 μm thick, the cadmium sulfide layer is 0.1 μm thick, the layer of undoped zinc oxide is 0.1 μm thick, and the i-CdTe photosensitive layer is 3 μm thick, 5 μm long, and 0.5 cm wide. Wherein the area of the photosensitive surface is 25,000 μm^2 , and the total thickness of the device structure, including the polyimide substrate, is 10 μm .