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Abstract

We report the first experimental study of low-frequency noise in p-InAsSbP/n-InAs infrared photodiodes. For forward bias, experiments have been carried out at 300K and 77K, in the photovoltaic regime the measurements have been done at 300K. At room temperature the current noise spectral density, S_i , exhibits the $\sim 1/f$ frequency dependence. For low currents, $I \leq I_0 \sim 4 \times 10^{-5}$ A, S_i is proportional to I^2 , at higher currents this dependence changes to $S_i \sim I$. At 77K the noise spectral density is significantly higher than at 300K, and Lorentzian contributions to noise are observed. The current dependences of spectral noise density can be approximately described as $S_i \sim I^{1.5}$ and show particularities suggesting the contribution of defects.