

Dark current components of nB(SL)n structures based on HgCdTe for a wide range of bias voltages

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The paper presents the results of studying the dark currents of nB(SL)n structures with a superlattice (SL) in the barrier region based on Hg_{1-x}Cd_xTe grown by molecular beam epitaxy (MBE) in a wide range of experimental conditions. Dark currents were measured in the temperature range from 11 K to 300 K for mesa structures with different cross-sectional diameters. The temperature dependences of the bulk component of the dark current density and the surface leakage current density are determined. It is shown that in the studied structures the current-voltage characteristics (CVCs) are formed by both the bulk and surface components of the current depending on the temperature and bias voltage.

Keywords: Hg_{1-x}Cd_xTe, nBn-structure, superlattice, electrical characteristics, dark currents.

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