

A Model of Antiparallel Spontaneous and Piezoelectric Polarizations in AlGaN/GaN

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Abstract. We demonstrate the effect of parallel and antiparallel orientations of spontaneous and piezoelectric polarizations upon the I - V characteristics of vertical metal/GaN/AlGaN/GaN heterostructures. Unlike in the generally accepted model considering parallel orientation of piezoelectric and spontaneous polarization, we achieved reasonable agreement between simulations and experiment only on assuming antiparallel orientation of the two kinds of polarization.