Abstracts

DC Conduction and Low-Frequency Noise Characteristics of GaAIAs/GaAs Single Heterojunction Bipolar Transistors at Room Temperature and Low Temperatures (Short Papers)

V.K. Raman, C.R. Viswanathan and M.E. Kim. "DC Conduction and Low-Frequency Noise Characteristics of GaAIAs/GaAs Single Heterojunction Bipolar Transistors at Room Temperature and Low Temperatures (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.6 (Jun. 1991 [T-MTT]): 1054-1058.

The dc conduction and low-frequency noise characteristics of GaAIAs/GaAs single heterojunction bipolar transistors (HBT's) have been investigated at room temperature and at temperatures down to 5 K. The I/sub c/ dependence of the current gain has been investigated at various temperatures. The low-frequency noise characteristics exhibit both 1/f and generation-recombination (g-r) components. The noise characteristics are sensitive to changes in base current and insensitive to changes in V/sub ce/, thus suggesting that the noise source is located in the vicinity of the emitter-base heterojunction. The noise spectrum follows a simple model based on minority carrier trapping effects at the heterointerface.

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