Engineering and technology design of nonlinear microelectronic microwave converters of radio signals based on nanoscale multilayer semiconductor resonant tunneling heterostructures

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Nonlinear converters of radio signals are key elements of radio engineering systems. The perspective direction of improvement of quality of nonlinear converters of radio signals is use of the nonlinear elements devices functioning on the basis of the quantum-dimensional principles. The problem of reliability assurance of nonlinear radio signals converters of microwave devices based on nanoscale multilayer semiconductor resonant tunneling heterostructures is solved. Individual reliability and reliability in a production lot is considered. The problem is solved by the example of radio signals mixer based on the resonant tunneling diode. Use of the described designing methodology will allow to increase reliability and mass production suitability of nonlinear microwave converters of radio signals.

Keywords: *nonlinear converters of radio signals, reliability, nanoscale multilayer semiconductor resonant tunneling heterostructures.*

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