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标题: Analysis of a monolithic integrated rectenna by using an InGaAs/InAlAs triple-barrier resonant tunneling diode for zero bias detection of submilimeter-waves
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摘要: Zero bias millimeter-wave detection has been investigated by using backward diodes with InGaAs-based or Sb-based interband tunneling and Schottky contact InGaAs-based double-barrier resonant tunneling diodes (DBRTDs). These were intended to be typical cases where the antenna and the detector are individually designed and mutually connected. On the other hand, in this paper we focus on constructing a monolithic type of rectenna (rectifying antenna) for sub-millimeter wave detection. Our objective is to propose and analyze zero bias detection properties with an InGaAs/InAlAs triple-barrier resonant tunneling diode (TBRTD) integrated with a bow-tie type of broadband self-complementary antenna. (C) 2011 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim
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