

236

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Title:Dependence of output power on slot antenna width in terahertz oscillating resonant tunneling diodes

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Abstract:We report on the dependence of the output power on the slot antenna width in resonant tunneling diode (RTD) oscillators. The oscillators have different antenna widths of 4, 8, and 20 μm and the same antenna length of 130 μm . Although the experimentally observed oscillation frequencies were ~ 500 GHz and independent of the antenna width, maximized output powers of $\sim 130 \mu\text{W}$ were obtained at the antenna width of 8 μm by the impedance matching between the RTD and the antenna. \copyright ; Springer Science+Business Media, LLC 2012.

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