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标 题 : Direct intensity modulation and wireless data transmission characteristics of terahertz-oscillating resonant tunnelling diodes
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摘 要 : Direct intensity modulation and wireless data transmission characteristics of terahertz-oscillating resonant tunnelling diodes (RTDs) is reported. A direct intensity modulation of the RTD oscillators was demonstrated, and the frequency response was measured. It was found that the 3 dB cutoff modulation frequency was limited by the parasitic elements of the external circuit, and increased up to 4.5 GHz by reducing such parasitic elements. Wireless data transmission by direct amplitude shift keying was demonstrated using an RTD oscillating at 542 GHz with cutoff frequency of 1.1 GHz. The BERs for bit rates of 2 and 3 Gbit/s were found to be 2 x 10(-8) and 3 x 10(-5), respectively.
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