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RTD-based THz-MIC by Film-Diode technology

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Abstract

This work aims at development of extremely compact and low-cost THz sources. Resonant-tunneling diode (RTD) is monolithically integrated with planar resonator and Vivaldi antenna on transferred membrane-substrate by Film-Diode (FD) process. The highest obtained oscillation-frequency is 1111GHz. This is the highest frequency RTD-based oscillator reported so far, and the highest-frequency Terahertz Monolithic Integrated Circuit (THz-MIC) realized so far by FD-technology.