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Title:300 GHz microbolometer double-dipole antenna for focal-plane-array imaging
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Abstract:A room-temperature planar microbolometer double-dipole antenna for the focal-plane-array imaging at 300 GHz is presented. The fabricated antenna with a Titan bolometer consists of the full-wavelength parallel-dipole array on a thin nitride membrane, double impedance-transformation sections and low-pass-filter readout taps on a silicon substrate. The simulated antenna directivity at 300 GHz is about 11.7 dBi and agrees well with the measured radiation pattern. The radiation efficiency is about 85 % and the estimated bandwidth more than 200 GHz. A responsivity of 40 V/W and a noise-equivalent power of 4 x 10(-11) W/root Hz have been measured, respectively.
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