Abstracts

A 200 GHz Planar Diode Subharmonically Pumped Waveguide Mixer with State-of-the-Art Performance

P.H. Siegel, R.J. Dengler, I. Mehdi, W.L. Bishop and T.W. Crowe. "A 200 GHz Planar Diode Subharmonically Pumped Waveguide Mixer with State-of-the-Art Performance." 1992 MTT-S International Microwave Symposium Digest 92.2 (1992 Vol. II [MWSYM]): 595-598.

This paper presents recent performance data for a 200 GHz subharmonically pumped waveguide mixer using an antiparallel pair of planar air bridge type GaAs Schottky barrier diodes. The measured mixer noise and conversion loss are below that of the best reported whisker contacted or planar diode mixers using the subharmonic pump configuration. In addition, the required local oscillator power is as low as 3 mW for the unbiased diode pair and significant LO noise suppression was observed. The waveguide design is a prototype for 640 GHz and uses split-block rectangular waveguide with a 2:1 width to height ratio throughout.

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