Abstracts

A Very Low-Noise, Fixed-Tuned Mixer for 240-270 GHz

M.T. Faber, J.W. Archer and R.J. Mattauch. "A Very Low-Noise, Fixed-Tuned Mixer for 240-270 GHz." 1985 MTT-S International Microwave Symposium Digest 85.1 (1985 [MWSYM]): 311-314.

A cryogenic, single-ended, fundamental frequency mixer is reported. The use of a small-area Schottky barrier diode (C/sub o/ = 4 fF) having low series resistance, together with a careful design and optimization, have yielded a very low-noise, broadband mixer which, when fixed-tuned and cooled to 20K, has a single-sideband noise temperature less than 400K for a local oscillator frequency between 242 and 272 GHz. At 266 GHz the mixer has only 6.4 dB of conversion loss and its SSB noise temperature is only 275K. This is the lowest noise temperature ever reported for a Schottky diode mixer in this frequency range.

❑ Return to main document.