Abstracts

An SIS Mixer for 85-116 GHz Using Inductively Shunted Edge-Junctions

S.-K. Pan, A.R. Kerr, M.J. Feldman, A.W. Kleinsasser, J. Stasiak, R.L. Sandstrom and W.J. Gallagher. "An SIS Mixer for 85-116 GHz Using Inductively Shunted Edge-Junctions." 1988 MTT-S International Microwave Symposium Digest 88.1 (1988 Vol. I [MWSYM]): 465-468.

For the most part, SIS receivers have failed by a wide margin to achieve the sensitivity promised by theory. One of the main reasons for this is the difficulty of providing appropriate embedding impedances at the signal and image frequencies as well as the higher harmonic sidebands. We describe an SIS mixer with a broadband integrated tuning structure. The mixer is tunable from 85-116 GHz, and at midband has a noise temperature of 6 ± 6 K DSB and unity DSB conversion gain. Referred to the mixer input flange, the receiver noise temperature is 9 ± 6 K at midband.

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