Abstracts

Progress on Tunerless SIS Mixers for the 200-300 GHz Band

A.R. Kerr, S.-K. Pan, A.W. Lichtenberger and D.M. Lea. "Progress on Tunerless SIS Mixers for the 200-300 GHz Band." 1992 Microwave and Guided Wave Letters 2.11 (Nov. 1992 [MGWL]): 454-456.

Hitherto, the best superconductor-insulator-superconductor (SIS) receivers have used one or two waveguide tuners to adjust the embedding impedance of the mixer. An integrated SIS mixer for the 200-300 GHz band with no adjustable tuning is described. A waveguide input is coupled to a coplanar mixer circuit with six individually tuned SIS junctions in series. Using the best mixer, the receiver noise temperature is 45-80 K DSB over 215-275 GHz. The mixer noise temperature at 230 GHz is 12 K DSB, and the conversion loss is 2.5 dB DSB.

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