Abstracts

A Simple Integrated Matching Element for SIS Quasiparticle Mixers

A.V. Raisanen, W.R. McGrath, P.L. Richards and F.L. Lloyd. "A Simple Integrated Matching Element for SIS Quasiparticle Mixers." 1985 MTT-S International Microwave Symposium Digest 85.1 (1985 [MWSYM]): 669-672.

An integrated superconducting microstrip is shown to be a convenient, flexible, and well characterized matching element for a superconductor-insulator-superconductor (SIS) heterodyne mixer. An open-circuited microstrip stub that reflects a parallel inductance across the junction is used to broaden the bandwidth of the RF match of a 30-40 GHz SIS mixer. Measurements with Pb-alloy junctions in a full-height waveguide mixer with fixed mechanical tuning give an instantaneous bandwidth of 10 to 15 percent with a mixer noise temperature T/sub M/(DSB)=10±2.5 K.

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