Abstracts

S-Parameter Measurements and Applications of Superconducting Flux Flow Transistors

J.S. Martens, V.M. Hietala, T.E. Zipperian, D.S. Ginley, C.P. Tigges and J.M. Phillips. "S-Parameter Measurements and Applications of Superconducting Flux Flow Transistors." 1991 MTT-S International Microwave Symposium Digest 91.3 (1991 Vol. III [MWSYM]): 1231-1234.

We have performed microwave two-port S-parameter measurements and modelling on Superconducting Flux Flow Transistors (SFFTs). These transistors, based on the magnetic control of flux flow in an array of High Temperature Superconducting (HTS) weak links, can exhibit significant available power gain at microwave frequencies (over 20 dB at 7-10 GHz in some devices). The input impedance is largely inductive while the output impedance is resistive and inductive. The characteristics are such that these devices are potentially useful in numerous applications including matched amplifiers.

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