Abstracts

Sum-Difference Circuits Using 0 DB and -3 DB Co-Directional Couplers for Hybrid Microwave and MIMIC Circuit Applications

S. Uysal, J. Watkins and C.W. Turner. "Sum-Difference Circuits Using 0 DB and -3 DB Co-Directional Couplers for Hybrid Microwave and MIMIC Circuit Applications." 1992 MTT-S International Microwave Symposium Digest 92.2 (1992 Vol. II [MWSYM]): 937-940.

A new design approach for microstrip Sigma - Delta Magic-T circuits is described. The technique employs entirely planar 0 dB and -3 dB co-directional quadrature couplers. 17% bandwidth is demonstrated at X-band from a Magic-T circuit built on an one inch square alumina substrate. Multioctave 0 dB coupling is also illustrated by a computed example. Any other coupling level can be derived directly from the 0 dB co-directional coupler thereby simplifying mask layout and significantly reducing design time. Accurate design curves for co-directional couplers on alumina substrate are given in the paper.

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