Abstracts

A Non-Reciprocal Ferrite Hybrid

M. Omori. "A Non-Reciprocal Ferrite Hybrid." 1967 G-MTT International Microwave Symposium Program and Digest 67.1 (1967 [MWSYM]): 66-69.

The paper reports a new type of ferrite device, a single junction, nonreciprocal hybrid. There are four symmetrical ports exiting from the junction any one of which may be considered the input. The input energy splits into the two side ports with the signals 90° out of phase from each other. The opposite port is isolated from the input. The phase shift between any two ports is nonreciprocal. Further, with sharts placed properly on the side ports, the device becomes a gyrator. First, the realizability of the device is shown by satisfying the unitary condition of the idealized scattering matrix. Then the operation of the hybrid is explained by the combination of two degenerate modes of the junction. Finally, the performance of an actual L-band model is shown.

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