Abstracts

The Frequency Behavior of Stripline Circulator Junctions

S. Ayter and Y. Ayasli. "The Frequency Behavior of Stripline Circulator Junctions." 1978 Transactions on Microwave Theory and Techniques 26.3 (Mar. 1978 [T-MTT]): 197-202.

The frequency dependence of the circulation equations for Y-junction stripline and microstrip circulators is investigated, and a new set of design curves is generated for the frequency-independent forms of the circulation condition's roots for both below- and above-resonance cases. Using this new set of curves, the wide-band design predicted by Wu and Rosenbaum and Bosma's narrow-band design are analyzed and compared. Quantitative arguments for the effect of the junction parameters on the bandwidth are given. To support the arguments, the theoretical junction performance of the 7-15 GHz "continuous tracking" circulator reported by Wu and Rosenbaum is calculated and compared with the theoretical performance of a 24 GHz circulator junction designed using the same method. Experimental results also are presented for the 24 GHz design. An analysis for the effect of the ferrite thickness on impedance matching is also included.

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