Abstracts

Novel Filter Design Incorporating Asymmetrical Stripline Y-Junction Circulators

H. How, C. Vittoria and C. Carosella. "Novel Filter Design Incorporating Asymmetrical Stripline Y-Junction Circulators." 1991 Transactions on Microwave Theory and Techniques 39.1 (Jan. 1991 [T-MTT]): 40-46.

Theoretical treatments of an asymmetrical stripline Y-junction circulator have been carried out. These include a formulation of the circulation conditions of an asymmetrical circulator as well as its transmission characteristics under wide-frequency-band consideration. We found that filter designs incorporating circulators are very plausible, which give rise to a narrow transmission band around the desired transmission frequency and a wide stopband extending many times the fundamental transmission frequency. In our design higher order mode excitations inherent in other filter designs are attenuated. In addition, owing to the off-resonance operation of the ferrites, our design could be applied under higher power conditions than traditional resonant ferrite filters.

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