Abstracts

Directly Connected Image Guide 3-dB Couplers with Very Flat Couplings

D.I. Kim, D. Kawabe, K. Araki and Y. Naito. "Directly Connected Image Guide 3-dB Couplers with Very Flat Couplings." 1984 Transactions on Microwave Theory and Techniques 32.6 (Jun. 1984 [T-MTT]): 621-627.

The design and evaluation of the directly connected image guide 3-dB directional coupler is described. These couplers have several useful features as a component for millimeter-wave integrated circuits because of broadband and flat coupling characteristics, mechanical stability, and compactness. The bandwidth of the directly connected image guide coupler with proper dimensions and the nearly optimixed value of h extends to about 28 percent under the tolerance limits of ±0.25 dB of deviation in coupling from 3 dB. Furthermore, experimental verification has been performed, and, hence, the usefulness of the proposed directly connected couplers with appropriate tapered sections was confirmed, even at frequencies where higher modes could be excited.

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