Abstracts

A 4-GHz Lumped-Element Circulator (Short Papers)

R.H. Knerr. "A 4-GHz Lumped-Element Circulator (Short Papers)." 1973 Transactions on Microwave Theory and Techniques 21.3 (Mar. 1973 [T-MTT]): 150-151.

The successful application of thin-film lumped-element circulators (LEC) at L band has led to the following question: How far can these devices be extended in frequency using our present beam-crossover technology? An exploratory study aimed at building an LEC at approximately 4 GHz was successfully completed. Preliminary tests showed a 20-dB band from 4.2 to 5 GHz with an insertion loss <1 dB (minimum, 0.5 dB). This includes fixture losses, which account for about 0.2 dB. The device has been tuned to operate above 5 GHz, and from the experiments it is concluded that a device of this type could be built at frequencies as high as X band. These devices are very small; at 4 GHz, the circulator junction is a 0.075- in diam.

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