电子与信息学报 2002 24 (2): 285-288 ISSN: 1009-5896 CN: 11-4494/TN

研究简报

双模曲折悬置带线环四极微波滤波器

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收稿日期 2000-2-20 修回日期 2000-6-30 网络版发布日期 2008-9-9 接受日期

摘要
该文研制了双模曲折悬置带线环四极微波滤波器。采用全波技术对该种滤波器特性进行的计算表明,它具有优良的窄通带、高选择性和小体积,与同类型二极滤波器相比,过渡带更陡峭。采用优化设计方法设计出了滤波器电路尺寸,制造了以ε_r=2.8的Teflon为介质基片的滤波器,测试得到的双模曲折悬置带线四极滤波器的中心频率为f_0=1.194 GHz,△f=19.4 MHz,通带插入损耗L_P≤4.3 dB,阻带衰减L_S>50 dB,实验结果和CAD预测作了比较,两者基本一致。这种滤波器可望在多种微波系统和移动通信系统中应用。

关键词 双模曲折悬置线环滤波器 平面微波滤波器 微波滤波器

分类号 TN62 TN713

4-pole microwave filters using dual-mode meander suspensive strip line loop resonators

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Abstract
The 4-pole microwave filters using dual-mode meander suspensive strip line loop resonators have been developed. The results of the full wave analysis of the filters have shown that 4-pole filters have better performance than the 2-pole fiilters of same type. A 4-pole filter of this type on ε_r= 2.8 Teflon substrate having a bandwidth △f=19.4MHz at the central frequency f_0 = 1.194GHz was designed and fabricated. The measured filter performance was compared with the prediction of CAD tool. The agreement was found to be good.

Key words Dual-mode meander filters Plane microwave filters Microwave filters

DOI:

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