Abstracts

A procedure for the design of microwave filters based on a distributed parameter model

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A synthesis procedure based on a distributed parameter model for both narrow-band and broad-band microwave filters is presented. The frequency response of the filter is described in terms of the characteristic polynomial T/sub 21/=S/sub 11//S/sub 21/ where S/sub 11/ and S/sub 21/ are the scattering parameters of the filter. Starting from the desired polynomial T/sub 21/, the design scheme directly yields the scattering parameters of the various junctions and the length of the resonators. On the basis of this technique, a Chebyshev-type 8 pole E-plane filter has been designed and built. The excellent agreement between the predicted and the measured data confirm the validity of this synthesis procedure.

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