Abstracts

Narrow Bandwidth Elliptic-Function Filters (1969 [MWSYM])

I. Rubinstein, R.L. Sleven and A.F. Hinte. "Narrow Bandwidth Elliptic-Function Filters (1969 [MWSYM])." 1969 G-MTT International Microwave Symposium Digest of Technical Papers 69.1 (1969 [MWSYM]): 298-303.

Although wide bandwidth microwave elliptic-function filters have previously been reported, this paper describes a circuit which provides, for the first time, a narrow bandwidth elliptic-function response at microwave frequencies. It is for narrow bandwidth applications (from 5 percent to a fraction of a percent) that the elliptic-function filter offers its most important advantages over other filter types--lower loss and greater selectivity. These features are verified by theoretical analysis and experimental data on a 1-percent bandwidth S-band stripline filter. The design of the filter, which is based upon the low-pass prototype, is simple to obtain with the relationships presented in this paper, and the elliptic-function response is readily realizable in printed or other TEM transmission lines. A waveguide elliptic-function filter is also discussed, but experimental verification of this has not yet been attempted.

❑ Return to main document.