Abstracts

W-Band Microshield Low-Pass Filters

S.V. Robertson, L.P.B. Katehi and G.M. Rebeiz. "W-Band Microshield Low-Pass Filters." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 625-628.

Experimental and theoretical results are presented for a planar W-Band low-pass filter. A stepped impedance implementation of a 7-section 0.5 dB equal ripple Chebyshev filter achieves an insertion loss of 1 dB in the passband and a 90 GHz cutoff frequency. The filter is fabricated in microshield line technology, a new type of planar transmission line based on coplanar waveguide supported by a thin dielectric membrane. The inadequacy of conventional quasi-static models is discussed, and a Finite-Difference Time-Domain (FDTD) analysis is applied to predict the filter performance.

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