Abstracts

High Performance Microshield Line Components

T.M. Weller, L.P.B. Katehi and G.M. Rebeiz. "High Performance Microshield Line Components." 1995 Transactions on Microwave Theory and Techniques 43.3 (Mar. 1995 [T-MTT]): 534-543.

Several millimeter-wave passive components have been fabricated using the microshield transmission line geometry, and their performance is presented herein. Microshield is a quasi-planar, half-shielded design which uses a thin dielectric membrane (1.5 µm) to support the conducting lines. This approach provides a nearly homogeneous, air-filled environment and thus allows extremely broad-band TEM operation. This paper examines the conductor loss and effective dielectric constant of microshield lines and presents results on transitions to conventional coplanar waveguide, right-angle bends, different stub configurations, and lowpass and bandpass filters. Experimental data is provided along with numerical results derived from an integral equation method. The microshield line is shown to be very suitable for high performance millimeter- and submillimeter-wave applications.

❑ Return to main document.