Abstracts

Confirmation of Slow Waves in a Crosstie Overlay Coplanar Waveguide and its Applications to Band-Reject Gratings and Reflectors

T.-H. Wang and T. Itoh. "Confirmation of Slow Waves in a Crosstie Overlay Coplanar Waveguide and its Applications to Band-Reject Gratings and Reflectors." 1988 Transactions on Microwave Theory and Techniques 36.12 (Dec. 1988 [T-MTT] (1988 Symposium Issue)): 1811-1818.

The slow-wave propagation along a new crosstie overlay slow-wave coplanar waveguide has been investigated both theoretically and experimentally. A slow-wave factor observed agrees reasonably well with the theoretical prediction. This structure is used for constriction of frequency-selective distributed Bragg reflectors (DBR's) of compact size. The effect of conductor loss is considered. A doubly periodic band-reject grating has been created from the DBR's and the band-reject phenomenon was observed as predicted. To improve passband characteristics of the grating, a monolithic slow-wave Chebyshev reflector was designed and fabricated. Agreement between theory and preliminary experiment has been confirmed. Based on this theory, a new slow-wave reflector with improved characteristics is proposed and examined. A respectable slow-wave factor and a drastic reduction of conductor loss have been predicted.

❑ Return to main document.