Abstracts

Dual-Harmonic Noncontacting Millimeter Waveguide Backshorts: Theory, Design, and Test

M.K. Brewer and A.V. Raisanen. "Dual-Harmonic Noncontacting Millimeter Waveguide Backshorts: Theory, Design, and Test." 1982 Transactions on Microwave Theory and Techniques 30.5 (May 1982 [T-MTT]): 708-714.

Noncontacting backshorts are necessary in many applications to avoid the wear characteristic of contacting shorts. To reduce losses, it is desirable to eliminate the passband at second harmonic frequencies inherent in conventional quarter-wavelength designs. To this effect, empirically and theoretically designed shorts have been fabricated. The theoretical design extends low-frequency Chebyshev filter theory techniques for use at millimeter-wave frequencies. Both designs have been tested using swept frequency reflectometer techniques. Tests have been carried out over a 40-GHz bandwidth at 100 GHz and a 30-GHz bandwidth at 200 GHz. The results are superior to those obtained with Lambda/ 4 backshorts tested in the same manner.

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