Abstracts

Wideband Polarizer in Circular Waveguide Loaded with Dielectric Discs

P.J. Meier and S. Arnow. "Wideband Polarizer in Circular Waveguide Loaded with Dielectric Discs." 1965 G-MTT Symposium Program and Digest 65.1 (1965 [MWSYM]): 73-78.

At last year's Symposium, it was shown that dielectric-disc loading could greatly increase the useful bandwidth of circular waveguide. Figure 1 is a sketch of a circular waveguide containing spaced high-k dielectric discs which strongly load the TE-11 (dominant) mode, but have little effect on the TM-01 mode which normally limits the single-mode bandwidth. Figure 2 shows the frequency range over which modes can propagate for disc loading and for uniform loading. Disc loading offers a much greater ratio of single-mode bandwidth, whose upper limit is then determined by the TE-21 cutoff. This wider frequency band is useful in the design of various components, particularly the polarization converter to be described.

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