Abstracts

Characteristics of Oversize Circular Waveguides and Transitions at 3-mm Wavelengths (Correspondence)

H.E. King and J.L. Wong. "Characteristics of Oversize Circular Waveguides and Transitions at 3-mm Wavelengths (Correspondence)." 1971 Transactions on Microwave Theory and Techniques 19.1 (Jan. 1971 [T-MTT]): 116-119.

The physical and electrical characteristics of a 0.995-in-diameter oversize circular waveguide and its associated transitions operating in the 92- to 96-GHz band are described. Both linear and nonlinear taper transitions were employed in converting from the WR-10 dominant-mode rectangular waveguide (0.100 by 0.050 in ID) to a 0.995-in-diameter circular waveguide. The results of the present investigations indicate that the nonlinear taper transitions yield considerably less multimoding effects. The measured attenuation for a 0.995-in-diameter oversize copper circular waveguide is 0.028 dB/ft as compared to a theoretical value of 0.02 dB/ft.

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