Abstracts

Investigation of Millimeter Wave Reflex Klystron Amplifiers (Correspondence)

K. Ishii and D.E. Schumacher. "Investigation of Millimeter Wave Reflex Klystron Amplifiers (Correspondence)." 1963 Transactions on Microwave Theory and Techniques 11.3 (May 1963 [T-MTT]): 212-213.

It has been shown that reflex klystrons are usable for microwave and millimeter wave amplification. The purpose of this communication is to report that a VA-99 fixed-cavity reflex klystron performed well as a negative-resistance amplifier in the "difficult" millimeter wave region and that the amplifier was operated not by loading it so that it was incapable of oscillation as has been previously reported, but by adjusting voltages and impedances so that it was on the edge of a mode of oscillation. All measurements were made using the setup shown in Fig. 1. In the amplifier section, the reflex klystron was connected to the main waveguide line with an H-plane tee with an EH tuner, each at the input and output end of the colinear arm of the H-plane tee. The repeller and anode voltages, and the circuit impedance were adjusted so that the oscillation stopped at the signal frequency.

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