Abstracts

Theory and Performance of a Power-Combining Multiple-Device Ladder Amplifier

S. Nogi, K. Fukui and S. Tanaka. "Theory and Performance of a Power-Combining Multiple-Device Ladder Amplifier." 1986 Transactions on Microwave Theory and Techniques 34.3 (Mar. 1986 [T-MTT]): 333-341.

This paper presents a detailed discussion on the microwave power amplification using a multiple-device ladder structure which is essentially an array of diode-mount-pairs in a rectangular waveguide cavity. For both transmission and reflection types, the capability of perfect combining of available powers from each component device and available input signal power is analytically described. A power flow distribution along the structure is also described to interpret the power-combining mechanism. Amplifier characteristics are studied through numerical analysis and well confirmed by experiments on X-band amplifiers with up to eight Gunn diodes.

❑ Return to main document.