Abstracts

A Producible 2 to 20 GHz Monolithic Power Amplifier

R. Halladay, M. Jones and S. Nelson. "A Producible 2 to 20 GHz Monolithic Power Amplifier." 1987 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 87.1 (1987 [MCS]): 19-21.

The design, fabrication, and performance of a 0.4-W, 2 to 20 GHz distributed amplifier are described in this paper. Small-signal gain is 5 dB and power-added efficiency is 15%. The amplifier is fabricated on ion-implanted GaAs, and achieves excellent performance through use of series gate capacitors and a tapered drain line. Circuit layout and optimization to obtain process insensitivity and first-pass design success are discussed. A comparison is made to a commercially available state-of-the-art 6 to 18 GHz amplifier designed using conventional (lossy-mismatch) topology. The distributed amplifier is shown to have much improved bandwidth, SWR, gain flatness, and insensitivity to process variations, while retaining similar output power and efficiency.

❑ Return to main document.