Abstracts

Design and Performance of an Octave Band 11 Watt Power Amplifier MMIC

J.J. Komiak. "Design and Performance of an Octave Band 11 Watt Power Amplifier MMIC." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 2001-2006.

The design and performance of a two-stage 3.0 to 6.0 GHz MMIC power amplifier that has established a new standard for power output and bandwidth in MMIC form are reported. The amplifier produces 11 W ± 1 dB from 3.0 to 6.0 GHz, with maximum power outputs of 13.5 W and 10.5 W at the respective S and C radar bands, and a minimum power of 9 W. This benchmark eclipses the best power levels reported for both two-stage (8 W at S-band) and single-stage (10 W at C-band) narrow-band MMIC power amplifiers with a continuous bandwidth coverage of 67%. The yield of this two-stage 40 mm gate periphery MMIC, based upon 0.5 µm gate length selective-implant MESFET technology, averaged 43%, with a 57% yield from the best wafer.

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