Abstracts

High efficiency S-band 30 W power GaAs FETs

I. Takenaka, H. Takahashi, K. Asano, J. Morikawa, K. Ishikura, M. Kanamori, M. Kuzuhara and H. Tsutsui. "High efficiency S-band 30 W power GaAs FETs." 1997 MTT-S International Microwave Symposium Digest 3. (1997 Vol. III [MWSYM]): 1417-1420.

An S-band high-efficiency power GaAs MESFET has been developed by employing the second-harmonic terminating technique in both the input and output matching circuits. This internally matched power FET demonstrates state-of-the-art performance of 30.9 W (44.9 dBm) output power with more than 60% power-added efficiency and a 15.0 dB linear gain at 2.5 GHz. Successful termination of the second-harmonic was confirmed by measuring gate and drain voltage waveforms using EOS (Electro-Optic Sampling). This amplifier can be assembled in conventional ceramic package, and thus is suitable for satellite communication system applications.

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