

Abstracts

Variable Output, High Efficiency-Low Distortion S-Band Power Amplifiers and Their Performances Under Single Tone and Noise Power Excitations

A. Platzker and S. Bouthillette. "Variable Output, High Efficiency-Low Distortion S-Band Power Amplifiers and Their Performances Under Single Tone and Noise Power Excitations." 1995 MTT-S International Microwave Symposium Digest 95.2 (1995 Vol. II [MWSYM]): 441-444.

A family of one stage, high efficiency-low distortion variable output power MIC amplifiers for narrow band applications at S-band was developed. The amplifiers utilize 0.5 μm gatelength PsHEMT devices with 4.8mm to 19.2mm peripheries. High efficiency (>60%) is maintained under CW operation at 2.45GHz over 12dB of input range by varying V_{ds} between 2 and 8V. At 2.45GHz, amplifiers with 19.2mm devices biased at $V_{ds}=8\text{V}$, provide 12W of single tone power at 62% PAE with 13dB gain (1dBc) and 36.5dBm noise power at NPR=17dB (40 MHz wide noise with 700KHz notch) with 43% efficiency.

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