Abstracts

A monolithic 2.5 V, 1 W silicon bipolar power amplifier with 55% PAE at 1.9 GHz

W. Simburger, A. Heinz, H.-D. Wohlmuth, J. Bock, K. Aufinger and M. Rest. "A monolithic 2.5 V, 1 W silicon bipolar power amplifier with 55% PAE at 1.9 GHz." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 853-856.

A monolithic RF power amplifier for 1.8-2 GHz has been realized in a 50 GHz-f/sub T/ Si bipolar technology and is operating down to supply voltages as low as 1.2 V. The balanced 2-stage power amplifier uses two on-chip transformers as input-balun and for interstage matching, with a high coupling coefficient of k=0.84. At 1.2 V, 2.5 V, and 3 V supply voltage an output power of 0.22 W, 1 W and 1.4 W is achieved, at a power added efficiency of 47%, 55% and 55%, respectively at 1.9 GHz. The small-signal gain is 28 dB.

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