Abstracts

The Effect of Source Impedance on Linearity in InGaP/GaAs Power HBTs

H. Yamada, S. Ohara, T. Iwai, Y. Yamaguchi, K. Imanishi and K. Joshin. "The Effect of Source Impedance on Linearity in InGaP/GaAs Power HBTs." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 555-558.

L-band power amplifiers operating with high efficiency and linearity at a single, low supply voltage are in strong demand in mobile communication systems. This paper reports the effect of source impedance on the phase distortion and the adjacent channel power (ACP) for a pi/4-shift QPSK modulated signal in the InGaP/GaAs power heterojunction bipolar transistors (HBTs). Our results show that the phase distortion and the ACP of our HBTs are improved by adding a positive reactance to a gain-matched source impedance. The ACP for a 50 kHz offset is -49.2 dBc with a power-added efficiency (PAE) of 56 % at a output power (P/sub out/) of 31 dBm under a supply voltage of 3.5 V.

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