Abstracts

A Comparison of Low Frequency Noise in GaAs and InP-Based HBTs and VCOs

J. Cowles, L. Tran, T. Block, D. Streit, C. Grossman, G. Chao and A. Oki. "A Comparison of Low Frequency Noise in GaAs and InP-Based HBTs and VCOs." 1995 MTT-S International Microwave Symposium Digest 95.2 (1995 Vol. II [MWSYM]): 689-692.

The low frequency collector noise spectra for GaAs-based and InP-based HBTs have been measured and compared as a function of emitter material, bias and temperature. Al/sub 20/Ga/sub 80/As/GaAs and lnAIAs/lnGaAs HBTs exhibited classic 1/f noise spectra while the Al/sub 30/Ga/sub 70/As/GaAs HBTs showed a pronounced burst noise component. Identical VCO circuit topologies implemented in Al/sub 20/Ga/sub 80/As/GaAs and lnAIAs/lnGaAs HBTs demonstrated a 10 dB improvement in phase noise at a 1 MHz offset over the Al/sub 30/Ga/sub 70/As/GaAs HBT-based VCO.

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