Abstracts

HEMT-HBT matrix amplifier

C. Paoloni. "HEMT-HBT matrix amplifier." 2000 Transactions on Microwave Theory and Techniques 48.8 (Aug. 2000 [T-MTT]): 1308-1312.

A novel matrix amplifier using simultaneously high electron-mobility transistors (HEMTs) and heterojunction bipolar transistors (HBTs) is proposed in this paper. The amplifier includes HEMTs in the first tier and HBTs in the second tier. The HEMT-HBT matrix amplifier in comparison to the HEMT matrix amplifier presents a notable lower dc power consumption without remarkable gain and bandwidth reduction, maintaining the advantage of using HEMTs in the first tier. A theory to demonstrate that the amplifier performance can be optimized if the HBTs in the second tier are properly chosen is also proposed. A comparison among the HEMT-HBT matrix amplifier, HEMT matrix amplifier, and HBT matrix amplifier is also presented.

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