Abstracts

A Monolithic GaAs HBT Upconverter

A.Y. Umeda, C.T. Matsuno, A.K. Oki, G.S. Dow, K.W. Kobayashi, D.K. Umemoto and M.E. Kim. "A Monolithic GaAs HBT Upconverter." 1990 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 90.1 (1990 [MCS]): 77-80.

A 2.6 to 5.5 GHz upconverter/mixer has been implemented with a GaAs heterojunction bipolar transistor (HBT) IC technology. The upconverter consists of a transconductance multiplier based on a Gilbert cell topology, followed by a two-stage Darlington-coupled amplifier. Measured conversion gain is greater than 20 dB up to an RF output frequency of 5.5 GHz. This upconverter is believed to be the first reported using the GaAs HBT technology.

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