

Abstracts

A 3-33 GHz PHEMT MMIC distributed drain mixer

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A compact wide-band GaAs PHEMT MMIC distributed drain mixer covering RF frequencies from 3 to 33 GHz is reported. The measured results show that the conversion loss of the distributed drain mixer is better than 4 dB over the frequency range at an LO power of 13 dBm without IF amplification. Using the matching circuit in the output of the FETs, LO-to-IF and LO-to-RF isolations are better than 19 dB from 3 to 33 GHz. This mixer utilizes a simple distributed topology with single-gate HEMTs and achieves very broad band performance comparable to cascode or dual-gate distributed mixers. The overall chip size of this MMIC is only 1.7/spl times/1 mm/sup 2/.

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