

Abstracts

A monolithic HEMT diode balanced mixer for 100-140 GHz

M. Morgan and S. Weinreb. "A monolithic HEMT diode balanced mixer for 100-140 GHz." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. 1 [MWSYM]): 99-102 vol. 1.

We report the design and evaluation of a broadband, balanced mixer for 100-140 GHz using a HEMT MMIC process on a 75 μ m InP substrate. The circuit uses Schottky diodes as mixing elements. It demonstrates a conversion loss of 15 dB plusmn 2 dB from 100-130 GHz with 5 dBm LO drive at 80 GHz. Measurements indicate a wide IF bandwidth extending beyond 50 GHz. This is the first demonstration of a monolithic HEMT diode balanced mixer in this frequency range.

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