

Abstracts

A monolithic HEMT diode balanced mixer for 100-140 GHz

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We report the design and evaluation of a broadband, balanced mixer for 100-140 GHz using a HEMT MMIC process on a 75 μm InP substrate. The circuit uses Schottky diodes as mixing elements. It demonstrates a conversion loss of 15 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.

 [Return to main document.](#)