Abstracts

A millimeter-wave broadband monolithic even harmonic image rejection mixer

K. Kawakami, M. Shimozawa, H. Ikematsu, K. Itoh, Y. Isota and O. Ishida. "A millimeter-wave broadband monolithic even harmonic image rejection mixer." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1443-1446.

This paper describes a millimeter-wave broadband monolithic even harmonic image rejection mixer with a ring connected anti-parallel diode pair. This mixer employs an even harmonic mixer with a ring connected anti-parallel diode pair to reduce the LO leakage. Also it employs the balanced type mixer with the Marchand balun to broaden the frequency range. Furthermore, the configuration of the image rejection mixer can suppress the image components. The chip size of the developed millimeter-wave broadband monolithic mixer is 1.2 mm/spl times/2.9 mm on a GaAs substrate. Conversion loss is less than 15.9 dB and image rejection ratio is more than 12.5 dB from 24 to 44 GHz. Broadband characteristics can be achieved by the proposed configuration.

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