Abstracts

Design and performance of a new uniplanar diode mixer

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We report the development of a new uniplanar singly balanced diode mixer. The new mixer employs a novel 180/spl deg/ out-of-phase power divider using slotline and coplanar waveguide. Good results were obtained for the first-designed mixer. The conversion loss is between 6.5-10 dB for the radio-frequency (RF) signal from 10 to 11.6 GHz and the LO signal of 6 dBm at 7 GHz. The LO-to-RF, RF-to-IF, and LO-to-IF isolations are more than 16, 20, and 38 dB, respectively. These results signify the feasibility of the new mixer and hence demonstrate an attractive device for microwave and millimeter-wave integrated circuits.

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