Abstracts

Design and stability test of a 2-40 GHz frequency doubler with active balun

F. van Raay and G. Kompa. "Design and stability test of a 2-40 GHz frequency doubler with active balun." 2000 MTT-S International Microwave Symposium Digest 00.3 (2000 Vol. III [MWSYM]): 1573-1576.

An ultra-broadband PHEMT MMIC frequency doubler is designed. It comprises a FET active balun stage and a push-pull doubler in common-source configuration. Due to the purely lumped-element concept, the required chip area is very low. Using broadband compensation and matching networks, a nearly flat output power performance up to a limit of 2/3 f/sub T/ with acceptable conversion loss is predicted in circuit simulations and confirmed with broadband waveform measurements. The stability of the entire circuit is investigated including hidden instabilities and arbitrary passive input and output load conditions based on a direct stability circle calculation.

❑ Return to main document.