Abstracts

A V-Band MMIC SPDT passive HEMT switch using impedance transformation networks

Yu-Jiu Wang, Kun-You Lin, Dow-Chih Niu and Huei Wang. "A V-Band MMIC SPDT passive HEMT switch using impedance transformation networks." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 253-256 vol.1.

A V-Band MMIC single pole double throw (SPDT) switch using GaAs PHEMT process is designed, fabricated and tested. In contrast to the conventional resonant-type switch design method, this passive FET switch circuit utilizes impedance transformation to compensate the drain-source capacitance effect for the off-state in millimeter-wave frequency range. This SPDT switch has a measured isolation better than 30 dB for the off-state and 4 dB insertion loss for the on-state from 53 GHz to 61 GHz. The isolation performance of this design approach outmatches previously published FET switches in this frequency range.

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