Abstracts

X-Band MMIC Switch with 70 dB Isolation and 0.5 dB Insertion Loss

D.A. Blackwell, D.E. Dawson and D.C. Buck. "X-Band MMIC Switch with 70 dB Isolation and 0.5 dB Insertion Loss." 1995 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 95.1 (1995 [MCS]): 97-100.

A single-pole, single-throw reflective MMIC switch with 0.5 dB insertion loss and 70 dB isolation over X-band has been demonstrated. A fabrication process that was optimized to achieve the best performance for switch FETs produced this exceptional device. The FET OFF capacitance was reduced by a factor of 1.6 by selectively recessing into the backside of the wafer underneath the FETs to within 1 µm of the top surface. The FET ON resistance remained the same. The reduced FET OFF capacitance allowed the use of larger periphery FETs to obtain the improved performance. The Ron-Coff product of this device is 30% lower than previously reported results.

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