Abstracts

Low-cost low actuation voltage copper RF MEMS switches

D. Balaraman, S.K. Bhattacharya, F. Ayazi and J. Papapolymerou. "Low-cost low actuation voltage copper RF MEMS switches." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 1225-1228 vol.2.

This paper presents the design, fabrication and testing of capacitive copper RF MEMS switches with various hinge geometries, fabricated on high-resistivity silicon substrates. The switches were fabricated using a simple low-cost four-mask process and 0.6-1.0 /spl mu/m thick membranes were made out of sputtered copper. The capacitive airgap in between the membrane and the signal line is 1.5-2.0 /spl mu/m. The lowest actuation voltage measured on the fabricated switches is 9 V. The measured insertion loss of a fabricated switch and its associated transmission time was 0.9 dB (mainly contributed by the transmission line itself) and the isolation was measured to be 25 dB at 40 GHz.

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