Abstracts

A very-low-loss 2-bit X-band RF MEMS phase shifter

G.L. Tan, R.E. Mihailovich, J.B. Hacker, J.F. DeNatale and G.M. Rebeiz. "A very-low-loss 2-bit X-band RF MEMS phase shifter." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 333-335 vol.1.

A novel low-loss phase shifter, based on RF MEMS series switches and a single-pole four-throw (SP4T) switch design, is presented. The phase shifter is fabricated on a 200 /spl mu/m-thick GaAs substrate, and occupies less than 12 mm/sup 2/ of space. The measured average insertion loss is -0.55 dB, with a reflection loss of less than -17 dB over the 8-12 GHz frequency range. The 2-bit phase shifter performs well up to 18 GHz with an average loss of only -0.85 dB and a near-perfect linear phase shift from DC-18 GHz. This is the lowest loss MMIC-type phase shifter to-date at 8-18 GHz.

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