Abstracts

2 and 4-bit DC-18 GHz microstrip MEMS distributed phase shifters

J.S. Hayden, A. Malczewski, J. Kleber, C.L. Goldsmith and G.M. Rebeiz. "2 and 4-bit DC-18 GHz microstrip MEMS distributed phase shifters." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 219-222 vol.1.

Two and four-bit wideband distributed microstrip phase shifters have been developed on a 21 mil (533 /spl mu/m) silicon substrate for DC-18 GHz operation. Presented here is the first demonstration of microstrip distributed MEMS transmission line (DMTL) designs, periodically loaded by MEMS varactors in series with a fixed value microstrip radial stub. The two-bit design results in a reflection coefficient less than -10 dB,an average insertion loss of -2.8 dB, and a maximum phase shift of 262/spl deg/ at 16 GHz. The four-bit design results in a reflection coefficient less than -9 dB, an average insertion loss of -3.0 dB, and a maximum phase shift of 333/spl deg/ at 16 GHz.

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