Abstracts

Phase shifters using (Ba,Sr)TiO/sub 3/ thin films on sapphire and glass substrates

B. Acikel, Yu Liu, A.S. Nagra, T.R. Taylor, P.J. Hansen, J.S. Speck and R.A. York. "Phase shifters using (Ba,Sr)TiO/sub 3/ thin films on sapphire and glass substrates." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1191-1194 vol.2.

In this paper, we present results from distributed phase shifter circuits that were fabricated on sapphire and glass substrates. The circuits employ voltage tunable (Ba,Sr)TiO/sub 3/ (BST) thin films deposited by rf magnetron sputtering. Both parallel-plate and interdigital capacitor structures are investigated. K/Ka-band phase shifters demonstrated a phase shift of 265/spl deg/ with an insertion loss of 5.8 dB at 20 GHz and 180/spl deg/ phase shift with an insertion loss of 4 dB at 30 GHz. Both circuits demonstrated a promising figure of merit /spl sim/60/spl deg//dB at 10 GHz. A C/X-band phase shifter demonstrated a phase shift of >460 degrees with an insertion loss of 8.8 dB at 8 GHz.

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