Abstracts

A new X-band 180/spl deg/ high performance phase shifter using (Ba, Sr)TiO/sub 3/ thin films

B. Acikel, T.R. Taylor, P.J. Hansen, J.S. Speck and R.A. York. "A new X-band 180/spl deg/ high performance phase shifter using (Ba, Sr)TiO/sub 3/ thin films." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1467-1469 vol.3.

In this paper, a new device topology has been proposed to implement parallel plate capacitors using BaSrTiO/sub 3/ (BST) thin films for microwave applications. The new device design simplifies the monolithic process and overcomes the problems associated with electrode patterning. An X-band 180/spl deg/ phase shifter has been implemented using new device layout. The circuit provided 240/spl deg/-phase shift with an insertion loss of only 3 dB at 10 GHz and room temperature. We have shown a figure of merit 93/spl deg//dB at 6.3 GHz and 87/spl deg//dB at 8.5 GHz. To our knowledge, these are the state of the art results for distributed phase shifters implemented using parallel plate or interdigital capacitors at room temperature.

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