Abstracts

A low-impedance coplanar waveguide using an SrTiO/sub 3/ thin film for GaAs power MMIC's

M. Tanabe, M. Nishitsuji, Y. Anda and Y. Ota. "A low-impedance coplanar waveguide using an SrTiO/sub 3/ thin film for GaAs power MMIC's." 2000 Transactions on Microwave Theory and Techniques 48.5 (May 2000 [T-MTT]): 872-874.

A novel structure for coplanar-waveguide transmission lines with low impedance and low loss is demonstrated in this paper. The new structure simply has a high dielectric SrTiO/sub 3/ thin film underneath the coplanar conductors. Due to the high dielectric constant of SrTiO/sub 3/, the coplanar line exhibited characteristic impedance as low as 18 /spl Omega/ with a slot width of 5 /spl mu/m and the center conductor width of 50 /spl mu/m, while a conventional coplanar line on GaAs showed only 30 /spl Omega/ with the same configuration. The newly developed coplanar structure is easily applicable for present GaAs monolithic-microwave integrated-circuit (MMIC) technology, especially for power MMIC's and low-impedance devices.

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