Abstracts

A Two-Stage Monolithic IF Amplifier Utilizing a High Dielectric Constant Capacitor

A. Chu, L.J. Mahoney, M.E. Elta, W.E. Courtney, W.J. Piacentini and J.P. Donnelly. "A Two-Stage Monolithic IF Amplifier Utilizing a High Dielectric Constant Capacitor." 1982 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 82.1 (1982 [MCS]): 61-63.

A two-stage monolithic IF amplifier incorporating sputtered Ta/sub 2/0/sub 5/ capacitor has been fabricated. The monolithic capacitor is based on a composite layer structure consisting of Au, Ta, Ta/sub 2/0/sub 5/, Ta and Au. This layered structure is sequentially deposited in a single sputtering run, which eliminates all possibility of particulate contamination. As a result a thin pinhole-free dielectric layer can be deposited over large areas, and 140 pF capacitors have been fabricated with excellent yields. The large unit area capacitance of 1500 pF/mm² available with the present process has the potential for reducing the size and cost of both microwave monolithic circuits and hybrid thin-film circuits.

❑ Return to main document.