Abstracts

RF MIM capacitors using high-K Al/sub 2/O/sub 3/ and AlTiO/sub x/ dielectrics

S.B. Chen, C.H. Lai, A. Chin, J.C. Hsieh and J. Liu. "RF MIM capacitors using high-K Al/sub 2/O/sub 3/ and AlTiO/sub x/ dielectrics." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 201-204 vol.1.

Record high capacitance density of 0.5 and 1.0 /spl mu/F/cm/sup 2/ are obtained for Al/sub 2/O/sub 3/ and AlTiO/sub x/ MIM capacitors respectively, with loss tangent <0.01 and process compatible to existing VLSI back-end integration. However, the AlTiO/sub x/ MIM capacitor has large capacitance reduction as increasing frequencies. In contrast, the Al/sub 2/O/sub 3/ MIM capacitor has good device integrity of low leakage current of 4.3/spl times/10/sup -8/ A/cm/sup 2/, small frequency-dependent capacitance reduction, and good reliability.

❑ Return to main document.