

Abstract

The first $8F^2$ Stack DRAM cell with $0.08\mu m^2$ size has been successfully integrated employing poly plug scheme for landing plug contacts and W/poly gates and Ru MIM capacitors, of which cell working has been proven under easy function check mode. Cell transistor with W gate technology exhibits a sufficient saturation current (I_{OP}) of $\sim 40\mu A$ with threshold voltage (V_{tsat}) of $0.9V$ and satisfactory ring oscillator delay characteristics of $\sim 50ps$.