

A Novel Bit Line - SToFM (Spacerless Top-Flat Mask) - Technology for 90nm DRAM generation and beyond.

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A Novel bit line scheme for self-aligned storage node contact is proposed for the first time. The new bit line structure leads to the remarkable enhancement of ILD gap fill tolerance and SAC etching selectivity. Furthermore, the smaller parasitic bit line capacitance can yield a wider sensing signal margin. The results obtained from 0.12 μm DRAM technology convince that this novel bit line scheme is much beneficial for 90 nm technology node and beyond