Highly Scalable sub-10F\(^2\) 1T1C COB Cell for high density FRAM


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Novel cell structure for sub-10 F\(^2\) cell size is for the first time developed. The key technologies for novel cell are, 1) **advanced thin film technologies** which enables MIM capacitor to be lowered to \(~500\) nm thick stack, 2) **one-mask capacitor etching technology** which produces \(>80^\circ\) fence slope of MIM capacitor, 3) **no cell via contact technology** by which capacitor pitch can be reduced to 2F, 4) **Al-reflow process** for backend inter-connection without degradation of ferroelectric capacitor.