

Highly Scalable sub-10F² 1T1C COB Cell for high density FRAM

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Novel cell structure for sub-10 F² 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° 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.