Ferroelectric random access memory has been considered as future memory device and it is strongly desired to
develop high density FRAM device beyond 32Mb for the application of stand-alone memory devices. We report for the
first time to develop highly manufacturable 32Mb FRAM, which is achieved by 300nm capacitor stack technology in
COB cell structure, a double encapsulated barrier layer scheme, an optimal inter-layer dielectric and inter-metallic
dielectric technology, and a novel common cell-via scheme.