FT24C256A HTOL Qualification Report

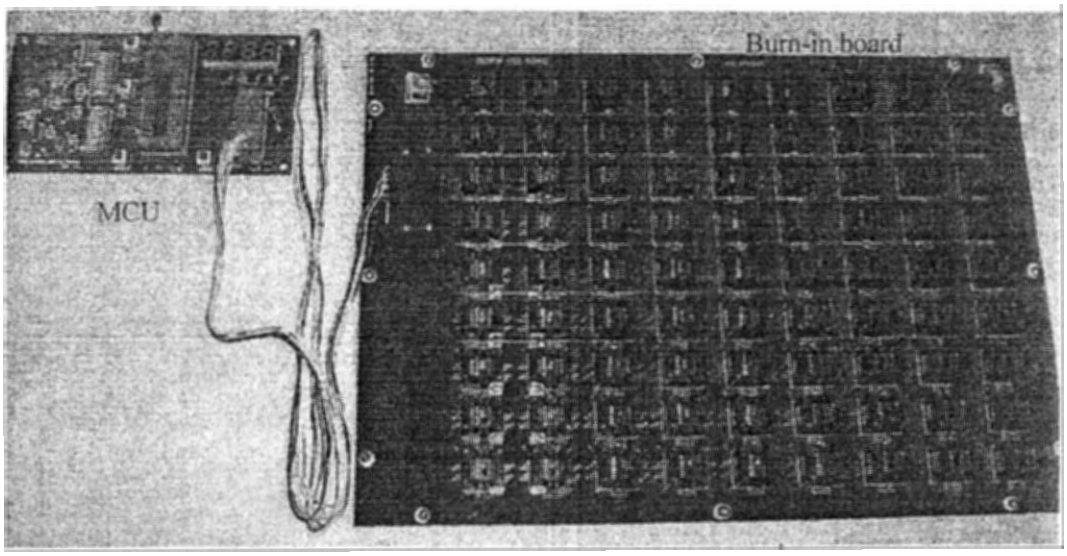
1) Background:

FT24C256A-U0I is used as the HTOL qualification vehicle for all different versions of FT24CxxA with densities up to 256 kbits. FT24C256A-U0I differs only in the low voltage paths and the array densities, with no changes to the high voltage circuit paths or the memory cells. Therefore although this HTOL experiment is done on FT24C256A-U0I, the qualification results are valid for all versions of FT24CxxA for density up to 256 kbits.

2) Experiment setup:

77 units each from three different lots fabricated at different times are used for the HTOL qualification. The units are randomly picked among those that passed the FT test. Each unit is then pre-conditioned with 100x page cycles. A checker board pattern of "55AA" is written to the whole array for the burn in test.

All 77 units from the same lot are burn-in together on the same burn-in board. A MCU is used for the full array sequential read. During the HTOL burn-in each unit is biased under a continuous full array sequential read condition. All units are then read at certain time intervals for data loss for up to 2000 hours. At the end of the HTOL burn in and data retention read out, the units are then subject to FT screening.



3) HTOL Pass criteria:

A lot is considered to pass the HTOL test if only up to 1 out of the 77 units has data loss or fails the FT test at the end of the burn-in. The product is considered to pass the HTOL qualification if ALL 3 lots pass the HTOL test.

4) Testing conditions:

Vcc	5.0 V
Mode	Full array sequential data read
Temperature	150C
Pass / Fail Criteria	Data content & FT program version 256A-1.0

5) Experimental Results (cumulative # of failures / 77 units):

Lot	HL6R6.00	HL6R6.10	HLL84.00
Fabout	2008.08	2008.12	2009.05
168 hrs	0 / 77	0 / 77	0 / 77
504 hrs	0 / 77	0 / 77	0 / 77
1,008 hrs	0 / 77	0 / 77	0 / 77
2,016 hrs	0 / 77	0 / 77	0 / 77
Result	Passed	Passed	Passed

6) Conclusions:

All three lots pass the HTOL requirement at 150C after 2016 hrs. It is thus concluded that FT24C256A will met the HTOL qualification requirement. This qualification also extends to all FT24CxxA for density up to 256 kbits.

Testing Engineering: Patrick Xiao **Date:** 2010.1.27

Approval: