



ATMEL CORPORATION

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AT-89S8252 FLASH RELIABILITY DATA

- 125°C DYNAMIC LIFETEST (PLASTIC)
- 150°C RETENTION BAKE (PLASTIC)
- 121°C/15PSG PRESSURE POT TEST
- EXTENDED TEMPERATURE CYCLE

JULY 2003

2325 Orchard Parkway San Jose CA. 95131

AT-89S8252

PLASTIC PACKAGE

125°C DYNAMIC LIFETEST

<u>LOT NUMBER</u>	<u>DATE CODE</u>	<u>SAMPLE SIZE</u>	<u>TOTAL NUMBER HOURS (K)</u>	<u>NUMBER OF FAILURES</u>
8A1867-1	8A9841	100	100.0	0
9B0070	9B9925	100	100.0	0

FAILURE RATETOTAL DEVICE HOURS

200,000 DEVICE HOURS

BEST ESTIMATE λ = 0.4% PER 1,000 HOURS50°C AMBIENTEXTRAPOLATION TO 50°C VIA ARRHENNIUS
EQUATION AND ACTIVATION ENERGY OF
0.5eV λ = 0.01% PER 1,000 HOURS (111 FITS)CONFIDENCE ESTIMATE λ 60 = 0.01% PER 1,000 HOURS

60% CONFIDENCE (154 FITS)

 λ 90 = 0.04% PER 1,000 HOURS

90% CONFIDENCE (390 FITS)

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PLASTIC PACKAGE

150°C RETENTION BAKE

<u>LOT NUMBER</u>	<u>DATE CODE</u>	<u>SAMPLE SIZE</u>	<u>TOTAL NUMBER HOURS (K)</u>	<u>NUMBER OF FAILURES</u>
8A1867-1	8A9841	100	100.0	0
9B0070	9B9925	50	50.0	0

FAILURE RATETOTAL DEVICE HOURS

150,000 DEVICE HOURS

BEST ESTIMATE λ = 0.7% PER 1,000 HOURS50°C AMBIENTEXTRAPOLATION TO 50°C VIA ARRHENNIUS
EQUATION AND ACTIVATION ENERGY OF
0.5eV λ = 0.01% PER 1,000 HOURS (98 FITS)CONFIDENCE ESTIMATE λ 60 = 0.01% PER 1,000 HOURS
60% CONFIDENCE (131 FITS) λ 90 = 0.03% PER 1,000 HOURS
90% CONFIDENCE (326 FITS)

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PLASTIC PACKAGE

121°C/15PSG PRESSURE POT TEST

<u>DATE</u> <u>CODE</u>	<u>PACKAGE</u> <u>TYPE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER OF FAILURES</u> <u>AT INDICATED HOURS</u>			
			(24)	(48)	(72)	(96)
9B9925	44 PLCC	50	0	0	0	0

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PLASTIC PACKAGE

EXTENDED TEMPERATURE CYCLE-65°C to +150°C PLCC/TSOP/SOIC/PDIP
-55°C to +125°C CBGA

<u>DATE CODE</u>	<u>PACKAGE TYPE</u>	<u>SAMPLE SIZE</u>	<u>NUMBER OF CYCLES</u>	<u>NUMBER OF FAILURES</u>
8A9841	44 PLCC	50	1000	0
9A9925	44 PLCC	50	1000	0