



5/9/2009

RELIABILITY MONITOR REPORT
FOR

TSMC 0.18 μ m Silicon Gate CMOS

MAXIM Integrated Products

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Sunnyvale, CA 94086

This Report was prepared by
Maxim Reliability Engineering

Summary:

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor. The specific products in this process monitor are:

DS26518	DS33M33	DS33R11	DS33X162	DS34T108
MAX3674ECM+	MAX4714EXT+	MAX4714EXT+T	MAX4928AETN	MAX4928AETN
MAX4928BETN	MAX49A8AETN	MAX9880EWM+		

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 79358** **FITS: 1.4**

The parameters used to calculate this failure rate are as follows:

Cf: 60% **Ea: 0.7** **Tu: 25 °C**

The reliability data follows and in this section is the detailed reliability data by stress. The reliability data section includes the latest data available. This report covers data between 1/1/2008 and 12/31/2008.

Process Information:

Process Description: TSMC 0.18µm Silicon Gate CMOS

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	0727	MAX3674ECM+	135C	288 HRS	48	0	QDTZBQ001DQ
HIGH TEMP OP LIFE	0744	DS33X162	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	QK075519BA-NPI
HIGH TEMP OP LIFE	0802	MAX4928BETN+	135C	192 HRS	48	0	QKYYBQ001CQ
HIGH TEMP OP LIFE	0810	DS26518	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	QG073727BK-NPI
HIGH TEMP OP LIFE	0810	DS26518	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	QG073727BL-NPI
HIGH TEMP OP LIFE	0810	DS26518	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	QG073727BJ-NPI
HIGH TEMP OP LIFE	0812	DS33R11	125C, 3.5V (PSA) & 2.0V (PSB)	1000 HRS	60	0	QK080847AC
HIGH TEMP OP LIFE	0814	MAX4714EXT+T	135C	1000 HRS	50	0	Q3V0AA028Q1
HIGH TEMP OP LIFE	0814	MAX4714EXT+T	135C	1000 HRS	50	0	Q3V0AA028Q2
HIGH TEMP OP LIFE	0814	MAX4714EXT+T	135C	1000 HRS	50	0	Q3V0AA028Q3
HIGH TEMP OP LIFE	0816	DS33R11	125C, 3.5V (PSA) & 2.0V (PSB)	1000 HRS	60	0	QK080847AD
HIGH TEMP OP LIFE	0824	DS34T108	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	QN085617AC-NPI

HIGH TEMP OP LIFE	0831	DS33M33	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	QG095632AC-NPI
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	0805	MAX4928AETN+	150C	1000 HRS	77	0	QKYZBQ001Q1
STORAGE LIFE	0805	MAX4928AETN+	150C	1000 HRS	77	0	QKYZBQ001Q2
STORAGE LIFE	0805	MAX4928AETN+	150C	1000 HRS	77	0	QKYZBQ001Q3
STORAGE LIFE	0810	DS26518	150C	1000 HRS	77	0	QG073727BK-NPI
STORAGE LIFE	0810	DS26518	150C	1000 HRS	77	0	QG073727BL-NPI
STORAGE LIFE	0810	DS26518	150C	1000 HRS	77	0	QG073727BJ-NPI
STORAGE LIFE	0812	DS33R11	150C	1000 HRS	77	0	QK080847AC
STORAGE LIFE	0814	MAX4714EXT+T	150C	1000 HRS	80	0	Q3V0AA028Q2
STORAGE LIFE	0814	MAX4714EXT+T	150C	500 HRS	80	0	Q3V0AA028Q3
STORAGE LIFE	0814	MAX4714EXT+T	150C	1000 HRS	80	0	Q3V0AA028Q1
STORAGE LIFE	0816	DS33R11	150C	1000 HRS	77	0	QK080847AD
STORAGE LIFE	0820	DS34T108	150C	1000 HRS	77	0	QN085617ABA-NPI
STORAGE LIFE	0824	DS34T108	150C	1000 HRS	77	0	QN085617AC-NPI
STORAGE LIFE	N/A	MAX9880EWM+T	150C	500 HRS	77	0	QSQAQ001C#
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
TEMP CYCLE, 5' RAMP, 10' DWELL	0805	MAX4928AETN	-65C TO 150C	1000 CYS	77	0	QKYZBQ001Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0805	MAX49A8AETN+	-65C TO 150C	1000 CYS	77	0	QKYZBQ001Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	0810	DS26518	-55C TO 125C	1000 CYS	77	0	QG073727BK-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	0810	DS26518	-55C TO 125C	1000 CYS	77	0	QG073727BL-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	0810	DS26518	-55C TO 125C	1000 CYS	77	0	QG073727BJ-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	0812	DS33R11	-55C TO 125C	1000 CYS	77	0	QK080847AC
TEMP CYCLE, 5' RAMP, 10' DWELL	0814	MAX4714EXT+T	-65C TO 150C	1000 CYS	80	0	Q3V0AA028Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0814	MAX4714EXT+T	-65C TO 150C	500 CYS	80	0	Q3V0AA028Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	0814	MAX4714EXT+T	-65C TO 150C	1000 CYS	80	0	Q3V0AA028Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0816	DS33R11	-55C TO 125C	1000 CYS	77	0	QK080847AD
TEMP CYCLE, 5' RAMP, 10' DWELL	0820	DS34T108	-40C TO +125C	1000 CYS	77	0	QN085617ABA-NPI

TEMP CYCLE, 5' RAMP, 10' DWELL	0824	DS34T108	-40C TO +125C	1000	CYS	77	0	QN085617AC-NPI
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX9880EWM+T	-40C TO +125C	500	CYS	77	0	QSQZQAQ001CB
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX9880EWM+T	-40C TO +125C	500	CYS	77	0	QSQZQAQ001DB
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX9880EWM+T	-40C TO +125C	500	CYS	77	0	QSQZQAQ001EB
Total:							0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
BIASED MOISTURE	0810	DS26518	85/85, 2.0 VOLTS	1000 HRS	44	0	QG073727BK-NPI	
BIASED MOISTURE	0810	DS26518	85/85, 2.0 VOLTS	1000 HRS	44	0	QG073727BL-NPI	
BIASED MOISTURE	0810	DS26518	85/85, 2.0 VOLTS	1000 HRS	44	0	QG073727BJ-NPI	
BIASED MOISTURE	0812	DS33R11	85/85, 3.5 VOLTS	1000 HRS	45	0	QK080847AC	
BIASED MOISTURE	0816	DS33R11	85/85, 3.5 VOLTS	1000 HRS	45	0	QK080847AD	
BIASED MOISTURE	0820	DS34T108	85/85, 3.5 VOLTS	1000 HRS	45	0	QN085617ABA-NPI	
BIASED MOISTURE	0824	DS34T108	85/85, 3.5 VOLTS	1000 HRS	45	0	QN085617AC-NPI	
Total:							0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
MOISTURE SOAK	0733	MAX4714EXT+	85 C/85% R.H.	1000 HRS	45	0	Q3V0AA021Q1	
MOISTURE SOAK	0733	MAX4714EXT+	85 C/85% R.H.	1000 HRS	43	0	Q3V0AA021Q2	
MOISTURE SOAK	0733	MAX4714EXT+	85 C/85% R.H.	1000 HRS	45	0	Q3V0AA021Q3	
MOISTURE SOAK	0814	MAX4714EXT+T	85 C/85% R.H.	1000 HRS	45	0	Q3V0AA028Q1	
MOISTURE SOAK	0814	MAX4714EXT+T	85 C/85% R.H.	1000 HRS	45	0	Q3V0AA028Q2	
MOISTURE SOAK	0814	MAX4714EXT+T	85 C/85% R.H.	1000 HRS	45	0	Q3V0AA028Q3	
HAST, NO BIAS	0820	DS34T108	130C, 85% R.H.	100 HRS	77	0	QN085617ABA-NPI	
HAST, NO BIAS	0824	DS34T108	130C, 85% R.H.	100 HRS	70	0	QN085617AC-NPI	
Total:							0	

FAILURE RATE: MTTF (YRS): 79358 FITS: 1.4