



4/8/2009

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	DS3100	DS3104	DS32506	DS33R41
DS33X162	MAX19860EXP+	MAX4928AETN	MAX4928AETN	MAX4928ETN+
MAX5859EXW+	MAX5895EGK+			

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 59479** **FITS: 1.9**

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 7/1/2007 and 6/30/2008 .

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	0704	MAX5859EXW+	135C	1000 HRS	45	0	QTU0DQ002G
HIGH TEMP OP LIFE	0704	MAX5859EXW+	135C	1000 HRS	45	0	QTU0DQ002H
HIGH TEMP OP LIFE	0704	MAX5859EXW+	135C	1000 HRS	44	0	QTU0DQ002I
HIGH TEMP OP LIFE	0715	MAX5895EGK+	135C	192 HRS	48	0	QOW3IQ002CQ
HIGH TEMP OP LIFE	0731	DS3104	125C, 3.5V (PSA) & 2.0V (PSB)	1000 HRS	45	0	QC073632BAB-NPI
HIGH TEMP OP LIFE	0743	DS32506	125C, 2.0V (PSA) & 3.5V (PSB)	1000 HRS	45	0	QK074592AD-NPI
HIGH TEMP OP LIFE	0744	DS33X162	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	QK075519BA-NPI
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
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	0717	MAX19860EXP+	150C	500 HRS	45	0	4BNXAAF8

STORAGE LIFE	0718	MAX19860EXP+	150C	500	HRS	45	0	4BNXAAEB
STORAGE LIFE	0725	MAX19860EXP+	150C	500	HRS	45	0	4BNXAAH
STORAGE LIFE	0743	DS32506	150C	1000	HRS	77	0	QK074592AD-NPI
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
Total:							0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
TEMP CYCLE, 5' RAMP, 10' DWELL	0708	DS33R41	-40C TO +125C	1000	CYS	77	0	QK562042AJA
TEMP CYCLE, 5' RAMP, 10' DWELL	0717	MAX19860EXP+	-65C TO 150C	1000	CYS	77	0	4BNXAAFB
TEMP CYCLE, 5' RAMP, 10' DWELL	0718	MAX19860EXP+	-65C TO 150C	200	CYS	77	0	4BNXAAE
TEMP CYCLE, 5' RAMP, 10' DWELL	0718	MAX19860EXP+	-65C TO 150C	1000	CYS	77	0	4BNXAAEB
TEMP CYCLE, 5' RAMP, 10' DWELL	0725	MAX19860EXP+	-65C TO 150C	1000	CYS	73	0	4BNXAAH
TEMP CYCLE, 5' RAMP, 10' DWELL	0726	DS3100	-55C TO 125C	1000	CYS	77	0	QK073291AC-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	0743	DS32506	-55C TO 125C	1000	CYS	77	0	QK074592AD-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	0805	MAX4928AETN+	-65C TO 150C	500	CYS	77	0	QKYZBQ001Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0805	MAX4928AETN+	-65C TO 150C	500	CYS	77	0	QKYZBA001Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0805	MAX4928AETN	-65C TO 150C	1000	CYS	77	0	QKYZBQ001Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0805	MAX4928AETN+	-65C TO 150C	500	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
Total:							0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
BIASED MOISTURE	0726	DS3100	85/85, 2.0 VOLTS	1000	HRS	44	0	QK073291AC-NPI

BIASED MOISTURE	0743	DS32506	85/85, 2.0 VOLTS	1000 HRS	45	0	QK074592AD-NPI
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
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
MOISTURE SOAK	0704	MAX5859EXW+	85 C/85% R.H.	1000 HRS	42	0	QTU0DQ002G
MOISTURE SOAK	0704	MAX5859EXW+	85 C/85% R.H.	1000 HRS	45	0	QTU0DQ002H
HAST, NO BIAS	0726	DS3100	130C, 85% R.H.	96 HRS	77	0	QK073291AC-NPI
HAST, NO BIAS	0743	DS32506	110C, 85% R.H.	264 HRS	74	0	QK074592AD-NPI
Total:						0	

FAILURE RATE:

MTTF (YRS): 59479

FITS: 1.9