



4/11/2009

RELIABILITY MONITOR REPORT
FOR

MFN 3 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:

MAX1204BCPP+	MAX1745EUB	MAX1745EUB+	MAX186AEAP	MAX3085ECSA+
MAX3161EEAG	MAX3162EEAI+	MAX3212CWI+	MAX3222EEUP+	MAX3223EPP+
MAX3225EUP+	MAX3229EBV+	MAX3318EEUP+	MAX3388ECUG	MAX603ESA
MAX603ESA +	MAX603ESA+	MAX6043BAUT	MAX834EUK+	MXL1543CAI
MXL1544CAI				

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 197208** **FITS: 0.6**

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 10/1/2007 and 9/30/2008 .

Process Information:

Process Description: MFN 3µm Silicon Gate CMOS

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	0730	MAX603ESA +	135C	500 HRS	74	0	NDNAFA750C#
HIGH TEMP OP LIFE	0730	MAX603ESA+	135C	1000 HRS	72	0	NDNAFA750C
HIGH TEMP OP LIFE	0733	MAX6043BAUT25	135C	1000 HRS	48	0	NF50B3006E#
HIGH TEMP OP LIFE	0734	MAX1204BCPP+	135C	1000 HRS	56	0	NG2ACA078Q1
HIGH TEMP OP LIFE	0734	MAX1204BCPP+	135C	1000 HRS	56	0	NG2ACA078Q2
HIGH TEMP OP LIFE	0734	MAX1204BCPP+	135C	1000 HRS	45	0	NG2ACA078Q3
HIGH TEMP OP LIFE	0736	MAX3223EPP+	135C	500 HRS	240	0	NDMBJA2G6A#
HIGH TEMP OP LIFE	0736	MAX3223EPP+	135C	1000 HRS	240	0	NDMBJA2G6A#
HIGH TEMP OP LIFE	0743	MAX3161EEAG+	135C	192 HRS	55	0	NGO1EQ001AQ
HIGH TEMP OP LIFE	0743	MAX3162EEAI+	135C	192 HRS	55	0	NGO2EQ001AQ
HIGH TEMP OP LIFE	0802	MAX3085ECSA+	135C	1000 HRS	77	0	ND9FC25A8C
HIGH TEMP OP LIFE	0803	MAX3388ECUG+	135C	1000 HRS	50	0	N050FA0A2Q1
HIGH TEMP OP LIFE	0803	MAX3388ECUG+	135C	1000 HRS	50	0	N050FA0A2Q2
HIGH TEMP OP LIFE	0803	MAX3388ECUG+	135C	1000 HRS	50	0	N050FA0A2Q3
HIGH TEMP OP LIFE	0804	MAX3222EEUP+	135C	138 HRS	45	0	JO3ALZ054L#
HIGH TEMP OP LIFE	0809	MXL1543CAI	135C	1000 HRS	45	0	N90AF2236B
HIGH TEMP OP LIFE	0815	MAX1745EUB+	135C	500 HRS	46	0	N3KBG3144Q1
HIGH TEMP OP LIFE	0815	MAX1745EUB+	135C	500 HRS	50	0	N3KBG3144Q2
HIGH TEMP OP LIFE	0815	MAX1745EUB+	135C	500 HRS	24	0	N3KBG3144Q2

HIGH TEMP OP LIFE	0815	MAX1745EUB+	135C	500	HRS	46	0	N3KBG3144Q3
HIGH TEMP OP LIFE	0817	MAX3222EEUP+	135C	138	HRS	80	0	JO3AMA024#
Total:							0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
STORAGE LIFE	0722	MAX186AEAP	150C	1000 HRS	76	0	NTKALA849F	
STORAGE LIFE	0726	MAX834EUK+	150C	1000 HRS	45	0	NNECDA043H#	
STORAGE LIFE	0730	MAX603ESA +	150C	500 HRS	80	0	NDNAFA750C#	
STORAGE LIFE	0730	MAX603ESA+	150C	1000 HRS	80	0	NDNAFA750C	
STORAGE LIFE	0734	MAX1204BCPP+	150C	1000 HRS	77	0	NG2ACA078Q1	
STORAGE LIFE	0734	MAX1204BCPP+	150C	1000 HRS	77	0	NG2ACA078Q2	
STORAGE LIFE	0734	MAX1204BCPP+	150C	1000 HRS	77	0	NG2ACA078Q3	
STORAGE LIFE	0742	MAX603ESA+	150C	1000 HRS	80	0	NDNAF3768D	
STORAGE LIFE	0751	MXL1544CAI	150C	1000 HRS	80	0	N1O1D2190B	
STORAGE LIFE	0802	MAX3085ECSA+	150C	1000 HRS	80	0	ND9FC25A8C	
STORAGE LIFE	0802	MAX603ESA	150C	1000 HRS	80	0	NDNAF3779B	
STORAGE LIFE	0803	MAX3388ECUG+	150C	1000 HRS	80	0	N050FA0A2Q1	
STORAGE LIFE	0803	MAX3388ECUG+	150C	1000 HRS	80	0	N050FA0A2Q2	
STORAGE LIFE	0803	MAX3388ECUG+	150C	1000 HRS	80	0	N050FA0A2Q3	
STORAGE LIFE	0808	MAX3225EUP+	150C	1000 HRS	77	0	JO3M3011D#	
STORAGE LIFE	0809	MXL1543CAI	150C	1000 HRS	80	0	N90AF2236B	
STORAGE LIFE	0815	MAX1745EUB+	150C	500 HRS	45	0	N3KBG3144Q#	
STORAGE LIFE	0815	MAX1745EUB+	150C	500 HRS	80	0	N3KBG3144Q1	
STORAGE LIFE	0815	MAX1745EUB	150C	1000 HRS	80	0	N3KBG3144Q1	
STORAGE LIFE	0815	MAX1745EUB+	150C	500 HRS	80	0	N3KBG3144Q2	
STORAGE LIFE	0815	MAX1745EUB	150C	1000 HRS	80	0	N3KBG3144Q2	
STORAGE LIFE	0815	MAX1745EUB+	150C	500 HRS	80	0	N3KBG3144Q3	
Total:							0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
TEMP CYCLE, 5' RAMP, 10' DWELL	0606	MAX834EUK+	-65C TO 150C	1000 CYS	79	0	NNECCA033B#
TEMP CYCLE, 5' RAMP, 10' DWELL	0619	MAX834EUK+	-65C TO 150C	1000 CYS	30	0	NNECCA034C#
TEMP CYCLE, 5' RAMP, 10' DWELL	0722	MAX186AEAP	-65C TO 150C	1000 CYS	77	0	NTKALA849F
TEMP CYCLE, 5' RAMP, 10' DWELL	0726	MAX834EUK+	-65C TO 150C	1000 CYS	80	0	NNECDA043H#
TEMP CYCLE, 5' RAMP, 10' DWELL	0730	MAX603ESA+	-65C TO 150C	1000 CYS	80	0	NDNAFA750C

TEMP CYCLE, 5' RAMP, 10' DWELL	0734	MAX1204BCPP+	-65C TO 150C	500	CYS	77	0	NG2ACA078Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0734	MAX1204BCPP+	-65C TO 150C	1000	CYS	77	0	NG2ACA078Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0734	MAX1204BCPP+	-65C TO 150C	1000	CYS	77	0	NG2ACA078Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	0742	MAX603ESA+	-65C TO 150C	1000	CYS	80	0	NDNAF3768D
TEMP CYCLE, 5' RAMP, 10' DWELL	0751	MXL1544CAI	-65C TO 150C	1000	CYS	79	0	N1O1D2190B
TEMP CYCLE, 5' RAMP, 10' DWELL	0802	MAX3085ECSA+	-65C TO 150C	1000	CYS	80	0	ND9FC25A8C
TEMP CYCLE, 5' RAMP, 10' DWELL	0802	MAX603ESA	-65C TO 150C	1000	CYS	80	0	NDNAF3779B
TEMP CYCLE, 5' RAMP, 10' DWELL	0803	MAX3388ECUG+	-65C TO 150C	1000	CYS	80	0	N050FA0A2Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0803	MAX3388ECUG+	-65C TO 150C	1000	CYS	80	0	N050FA0A2Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0803	MAX3388ECUG+	-65C TO 150C	1000	CYS	80	0	N050FA0A2Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	0804	MAX3222EEUP+	-65C TO 150C	1000	CYS	80	0	JO3ALZ054L#
TEMP CYCLE, 5' RAMP, 10' DWELL	0808	MAX3225EUP+	-65C TO 150C	1000	CYS	80	0	JO3EM3011D#
TEMP CYCLE, 5' RAMP, 10' DWELL	0809	MXL1543CAI	-65C TO 150C	1000	CYS	80	0	N90AF2236B
TEMP CYCLE, 5' RAMP, 10' DWELL	0815	MAX1745EUB+	-65C TO 150C	1000	CYS	80	0	N3KBG3144Q#
TEMP CYCLE, 5' RAMP, 10' DWELL	0815	MAX1745EUB+	-65C TO 150C	1000	CYS	80	0	N3KBG3144Q
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX3229EBV+T	-40C TO +125C	1000	CYS	75	0	N/A
Total:							0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
BIASED MOISTURE	0619	MAX834EUK+	130C, 85% R.H.	96 HRS	80	0	NNECCA034C#
BIASED MOISTURE	0722	MAX186AEAP	130C, 85% R.H.	96 HRS	50	0	NTKALA849F
BIASED MOISTURE	0726	MAX834EUK+	130C, 85% R.H.	96 HRS	80	0	NNECDA043H#
BIASED MOISTURE	0730	MAX603ESA+	130C, 85% R.H.	96 HRS	50	0	NDNAFA750C
BIASED MOISTURE	0734	MAX1204BCPP+	130C, 85% R.H.	96 HRS	50	0	NG2ACA078Q1
BIASED MOISTURE	0734	MAX1204BCPP+	130C, 85% R.H.	96 HRS	50	0	NG2ACA078Q2
BIASED MOISTURE	0734	MAX1204BCPP+	130C, 85% R.H.	96 HRS	50	0	NG2ACA078Q3
BIASED MOISTURE	0742	MAX603ESA+	130C, 85% R.H.	96 HRS	50	0	NDNAF3768D
BIASED MOISTURE	0751	MXL1544CAI	130C, 85% R.H.	96 HRS	48	0	N1O1D2190B
BIASED MOISTURE	0802	MAX3085ECSA+	130C, 85% R.H.	96 HRS	50	0	ND9FC25A8C
BIASED MOISTURE	0802	MAX603ESA	130C, 85% R.H.	96 HRS	50	0	NDNAF3779B

BIASED MOISTURE	0803	MAX3388ECUG+	130C, 85% R.H.	96	HRS	46	0	N050FA0A2Q1
BIASED MOISTURE	0803	MAX3388ECUG+	130C, 85% R.H.	96	HRS	50	0	N050FA0A2Q2
BIASED MOISTURE	0803	MAX3388ECUG+	130C, 85% R.H.	96	HRS	50	0	N050FA0A2Q3
BIASED MOISTURE	0804	MAX3222EEUP+	130C, 85% R.H.	96	HRS	25	0	JO3ALZ054L#
BIASED MOISTURE	0808	MAX3225EUP+	130C, 85% R.H.	96	HRS	21	0	JO3EM3011D#
BIASED MOISTURE	0809	MXL1543CAI	130C, 85% R.H.	96	HRS	50	0	N90AF2236B
BIASED MOISTURE	0815	MAX1745EUB+	130C, 85% R.H.	96	HRS	40	0	N3KBG3144Q#
BIASED MOISTURE	0815	MAX1745EUB+	130C, 85% R.H.	96	HRS	40	0	N3KBG3144Q\$
BIASED MOISTURE	0815	MAX1745EUB+	130C, 85% R.H.	96	HRS	40	0	N3KBG3144Q
BIASED MOISTURE	0815	MAX1745EUB+	130C, 85% R.H.	96	HRS	40	0	N3KBG3144Q%
BIASED MOISTURE	0817	MAX3222EEUP+	130C, 85% R.H.	96	HRS	26	0	JO3AMA024#
BIASED MOISTURE	0817	MAX3222EEUP+	130C, 85% R.H.	96	HRS	54	0	JO3AMA024#
Total:							0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
MOISTURE SOAK	0606	MAX834EUK+	130C, 85% R.H.	96	HRS	80	0	NNECCA033B#
MOISTURE SOAK	0619	MAX834EUK+	130C, 85% R.H.	96	HRS	80	0	NNECCA034C#
MOISTURE SOAK	0726	MAX834EUK+	130C, 85% R.H.	96	HRS	80	0	NNECDA043H#
MOISTURE SOAK	0804	MAX3222EEUP+	130C, 85% R.H.	96	HRS	80	0	JO3ALZ054L#
MOISTURE SOAK	0808	MAX3225EUP+	130C, 85% R.H.	96	HRS	80	0	JO3EM3011D#
MOISTURE SOAK	0815	MAX1745EUB+	130C, 85% R.H.	1	HRS	80	0	N3KBG3144Q#
MOISTURE SOAK	0815	MAX1745EUB+	130C, 85% R.H.	96	HRS	80	0	N3KBG3144Q
MOISTURE SOAK	0817	MAX3222EEUP+	130C, 85% R.H.	96	HRS	80	0	JO3AMA024#
Total:							0	

FAILURE RATE:

MTTF (YRS): 197208

FITS: 0.6