



4/8/2009

**RELIABILITY MONITOR REPORT
FOR**

DAL 0.35 μ m Silicon Gate CMOS

MAXIM Integrated Products

**120 San Gabriel Dr.
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:

DS1080L	DS1099	DS1181L	DS2431	DS2745
DS2780	DS2781	DS2782	DS2784	DS2786
DS2788	DS4424	DS7505	MAX3816ACUE	MAX4760EWX+
MAX5477HETE	MAX7456EUI+			

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 92745 FITS: 1.2

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: DAL 0.35µm Silicon Gate CMOS

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	0723	DS2786	125C, 5.5 VOLTS	1000 HRS	45	0	QJ801005BA
HIGH TEMP OP LIFE	0727	DS2781	125C, 5.5 VOLTS	1000 HRS	77	0	QK738184BBA
HIGH TEMP OP LIFE	0730	MAX7456EUI+	135C	192 HRS	55	0	DXI0EQ002AQ
HIGH TEMP OP LIFE	0732	DS2784	125C, 5.5 V (PSA) & 15.0 V (PSB)	1000 HRS	77	0	QJ738201BC
HIGH TEMP OP LIFE	0732	DS1099	125C, 5.5 VOLTS	408 HRS	45	0	IJ611604AF
HIGH TEMP OP LIFE	0732	DS1099	125C, 5.5 VOLTS	408 HRS	32	0	IJ611604AF
HIGH TEMP OP LIFE	0732	DS1080L	125C, 3.6 VOLTS	1000 HRS	45	0	IJ549628BE
HIGH TEMP OP LIFE	0736	DS1181L	125C, 3.6 VOLTS	1000 HRS	45	0	QK805647BBA-NPI
HIGH TEMP OP LIFE	0736	DS2788	125C, 5.5 VOLTS	1000 HRS	77	0	QK718177CC-NPI
HIGH TEMP OP LIFE	0744	DS2745	125C, 5.5 VOLTS	1000 HRS	77	0	QD801003ABA
HIGH TEMP OP LIFE	0745	DS1099	125C, 5.5 VOLTS	240 HRS	45	0	VD736413AC
HIGH TEMP OP LIFE	0746	DS7505	125C, 3.7 VOLTS	1000 HRS	77	0	QJ805646BC-NPI
HIGH TEMP OP LIFE	0749	DS2782	125C, 5.5 VOLTS	1000 HRS	75	0	QK753345AE

HIGH TEMP OP LIFE	0804	DS2780	125C, 5.5 VOLTS	1000 HRS	77	0	QK752167ADA
HIGH TEMP OP LIFE	0804	DS4424	125C, 5.5 VOLTS	1000 HRS	45	0	QJ804645AC-NPI
HIGH TEMP OP LIFE	0809	MAX3816ACUE+	135C	192 HRS	48	0	DK0AFA001DQ
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	0732	DS1099	150C	1000 HRS	77	0	IJ611604AF
STORAGE LIFE	0732	DS1080L	150C	1000 HRS	55	0	IJ549628BE
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	1500 CYS	76	0	DRI0CA006DA
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	2500 CYS	76	0	DR10CA006DA
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	2000 CYS	76	0	DR10CA006DA
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	1500 CYS	77	0	DRI0CA006DB
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	2000 CYS	77	0	DR10CA006DB
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	2500 CYS	76	0	DR10CA006DB
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	2000 CYS	77	0	DR10CA006DC
TEMP CYCLE, 5' RAMP, 10' DWELL	0629	MAX5477HETE	-65C TO 150C	2500 CYS	77	0	DRI0CA006DC
TEMP CYCLE, 5' RAMP, 10' DWELL	0723	DS2431	-65C TO 150C	1000 CYS	77	0	QE730052ABA-NPI
BOND STRENGTH	0723	DS2431	MIL-STD-883- 2011 : COND D	30 WIRES	15	0	QE730052ABA-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	DS1099	-55C TO 125C	1000 CYS	77	0	IJ611604AF
BOND STRENGTH	0732	DS1099	MIL-STD-883- 2011 : COND D	30 WIRES	5	0	IJ611604AF
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	DS1080L	-65C TO 150C	500 CYS	77	0	IJ549628BE
BOND STRENGTH	0732	DS1080L	MIL-STD-883- 2011 : COND D	40 WIRES	5	0	IJ549628BE
TEMP CYCLE, 5' RAMP, 10' DWELL	0738	MAX7456EUI+	-65C TO 150C	450 CYS	77	0	DXI0EA006Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0738	MAX7456EUI+	-65C TO 150C	450 CYS	77	0	DXI0EA006Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0738	MAX7456EUI+	-65C TO 150C	450 CYS	77	0	DXI0EA006Q3
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4760EWX+T	-40C TO +125C	300 CYS	77	0	DIB2DA029Q1
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4760EWX+T	-40C TO +125C	500 CYS	77	0	DIB2DA044Q1

TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4760EWX+T	-40C TO +125C	500	CYS	77	0	DIB2DA044Q2
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4760EWX+T	-40C TO +125C	500	CYS	77	0	DIB2DA044Q3
Total:							0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
HAST	0732	DS1099	130C, 85%R.H.,5.5V	96	HRS	77	0	IJ611604AF
HAST	0732	DS1080L	130C, 85%R.H.,3.5V	96	HRS	77	0	IJ549628BE
BIASED MOISTURE	0738	MAX7456EUI+	130C, 85% R.H.	96	HRS	48	0	DXI0EA006Q1
BIASED MOISTURE	0738	MAX7456EUI+	130C, 85% R.H.	96	HRS	48	0	DXI0EA006Q2
BIASED MOISTURE	0738	MAX7456EUI+	130C, 85% R.H.	96	HRS	48	0	DXI0EA006Q3
Total:							0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
AUTOCLAVE	0732	DS1099	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0	IJ611604AF
AUTOCLAVE	0732	DS1080L	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0	IJ549628BE
Total:							0	

W/E ENDURANCE AND DATA RET'N

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
WRITE CYCLE STRESS (KCYS)	0732	DS2784	50 C, 5.5 V (PSA) & 15.0 V (PSB)	50	KCYS	77	0	QJ738201BC
STORAGE LIFE	0732	DS2784	150C	1000	HRS	77	0	QJ738201BC
WRITE CYCLE STRESS (KCYS)	0736	DS2788	50 C, 5.5 VOLTS	50	KCYS	77	0	QK718177CC-NPI
STORAGE LIFE	0736	DS2788	150C	1000	HRS	77	0	QK718177CC-NPI
STORAGE LIFE	0746	DS7505	150C	1000	HRS	77	0	QJ805646BC-NPI
WRITE CYCLE STRESS (KCYS)	0746	DS7505	25 C, 3.7 VOLTS	80	KCYS	77	0	QJ805646BC-NPI
STORAGE LIFE	0746	DS7505	150C	1000	HRS	77	0	QJ805646BC-NPI
WRITE CYCLE STRESS (KCYS)	0746	DS7505	85 C, 3.7 VOLTS	20	KCYS	77	0	QJ805646BC-NPI
Total:							0	

FAILURE RATE:

MTTF (YRS): 92745

FITS: 1.2