



4/8/2009

RELIABILITY MONITOR REPORT
FOR

uSOP Package

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 Package Reliability Monitor. The specific assemblies included in this package monitor are:

ASSY SITE	PINS PACKAGE		
	10 uSOP (Pb-Free)	ATP (Amkor, PI)	8 uSOP
ATP (Amkor, PI)	8 uSOP (Pb-Free)	ATP (Amkor, PI)	10 uSOP (Pb-Free)
ISPL (ATEC, PI)	8 uSOP (Pb-Free)	Unisem Malaysia	8 uSOP
Unisem Malaysia	10 uSOP	Unisem Malaysia	8 uSOP (Pb-Free)
Unisem Malaysia	10 uSOP (Pb-Free)	UTL (NSEB) UTAC	8 uSOP (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 105520 FITS: 1.1

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

Cf: 60% Ea: 0.7 Tu: 25 °C

The reliability data follows. A the start of this data is a description of the assembly vehicle used to generate this reliability data. The next section is the detailed reliability data for each stress. The reliability data section includes the latest data available. This report covers data between 7/1/2007 and 6/30/2008.

Assembly Information:

Package Type: uSOP
Date Code Range: 0515 to 0741

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
ULTRASOUND	0515	MAX4402AUA	J-STD-020		22	0	
PHYSICAL DIMENSIONS	0515	MAX4402AUA	JESD22-B100		10	0	
ULTRASOUND	0646	MAX868EUB+	J-STD-020		22	0	
PHYSICAL DIMENSIONS	0719	MAX2750EUA+	JESD22-B100		10	0	
LEAD FINISH ADHESION	0719	MAX2750EUA+	MIL-STD-883-2025		5	0	
SOLDERABILITY (Pb-Free)	0719	MAX2750EUA+	JESD22-B102, COND C (245C)		15	0	
SOLDERABILITY (Pb-Free)	0735	MAX7500MUA+	JESD22-B102, COND C (245C)		15	0	
SOLDERABILITY (Pb-Free)	0741	MAX7500MUA+	JESD22-B102, COND C (245C)		15	0	
Total:						0	

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	0515	MAX4402AUA	260C +/-5C	1 PASS	250	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	0515	MAX4402AUA	-65C TO 150C	1000 CYS	77	0	

Total: 0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0515	MAX4402AUA	130C, 85% R.H.	96 HRS	40	0	
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0515	MAX4402AUA	130C, 85% R.H.	96 HRS	77	0	
Total:						0	

Assembly Information:

Package Type: uSOP (Pb-Free)

Date Code Range: 0549 to 0816

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0648	MAX9588AUA+	135C	192 HRS	48	0	
HIGH TEMP OP LIFE	0708	MAX4081FAUA+	135C	1000 HRS	47	0	
HIGH TEMP OP LIFE	0709	DS1090	125C, 5.5 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0718	DS1124	125C, 5.25 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0718	DS1124	125C, 5.25 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0723	DS1372	125C, 5.5 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0728	MAX4209HAUA+	135C	192 HRS	55	0	
HIGH TEMP OP LIFE	0737	MAX1790EUA+	135C	1000 HRS	50	0	
HIGH TEMP OP LIFE	0737	MAX1790EUA+	135C	1000 HRS	50	0	
HIGH TEMP OP LIFE	0737	MAX1790EUA+	135C	1000 HRS	50	0	
HIGH TEMP OP LIFE	0742	MAX2750AUA+	135C	500 HRS	74	0	
HIGH TEMP OP LIFE	0744	DS2745	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0745	DS1099	125C, 5.5 VOLTS	240 HRS	45	0	
HIGH TEMP OP LIFE	0752	MAX6683AUB+	135C	192 HRS	54	0	
HIGH TEMP OP LIFE	0802	DS3502	125C, 5.5 V (PSA) & 15.0 V (PSB)	1000 HRS	77	0	
HIGH TEMP OP LIFE	0811	DS1080CL	125C, 3.6 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0811	MAX1162ACUB+	135C	96 HRS	79	0	
HIGH TEMP OP LIFE	0814	MAX2130EUA+	135C	1000 HRS	48	0	
Total:						0	

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
PHYSICAL DIMENSIONS	0549	LMX358AUA+	JESD22-B100		10	0	
ULTRASOUND	0631	MAX4402AUA+	J-STD-020		22	0	

PHYSICAL DIMENSIONS	0631	MAX4402AUA+	JESD22-B100			10	0
LEAD FINISH ADHESION	0631	MAX4402AUA+	MIL-STD-883-2025			10	0
SOLDERABILITY (Pb-Free)	0631	MAX4402AUA+	JESD22-B102, COND C (245C)			15	0
BOND STRENGTH	0631	MAX4402AUA+	> 5 GMS	30	WIRES	10	0
SOLDERABILITY (Pb-Free)	0742	MAX2750AUA+	JESD22-B102, COND C (245C)			15	0
LEAD FINISH ADHESION	0746	MAX668EUB+	MIL-STD-883-2025			10	0
SOLDERABILITY (Pb-Free)	0746	MAX668EUB+	JESD22-B102, COND C (245C)			15	0
SOLDERABILITY (Pb-Free)	0814	MAX2130EUA+	JESD22-B102, COND C (245C)			15	0
ULTRASOUND	0816	MAX1806EUA25+	J-STD-020			22	0
Total:						0	0

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	0631	MAX4402AUA+	260C +0/-5C	1	PASS	250	0
CONVECTION REFLOW	0659	LMX358AUA+	260C +0/-5C	3	PASS	317	0
CONVECTION REFLOW	0732	MAX2130EUA+	260C +0/-5C	3	PASS	150	0
CONVECTION REFLOW	0732	MAX2130EUA+	260C +0/-5C	3	PASS	150	0
CONVECTION REFLOW	0732	MAX2130EUA+	260C +0/-5C	3	PASS	150	0
CONVECTION REFLOW	0737	MAX1790EUA+	260C +0/-5C	3	PASS	230	0
CONVECTION REFLOW	0737	MAX1790EUA+	260C +0/-5C	3	PASS	230	0
CONVECTION REFLOW	0737	MAX1790EUA+	260C +0/-5C	3	PASS	230	0
CONVECTION REFLOW	0747	MAX668EUB+	260C +0/-5C	3	PASS	240	0
CONVECTION REFLOW	0750	MAX668EUB+	260C +0/-5C	3	PASS	240	0
Total:						0	0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0709	DS1090	150C	1000	HRS	77	0
STORAGE LIFE	0718	DS1124	150C	1000	HRS	77	0
STORAGE LIFE	0737	MAX1790EUA+	150C	1000	HRS	77	0
STORAGE LIFE	0746	MAX668EUB+	150C	1000	HRS	80	0
Total:						0	0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	0631	MAX4402AUA+	-65C TO 150C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0718	DS1124	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	MAX2130EUA+	-65C TO 150C	500	CYS	77	0

TEMP CYCLE, 5' RAMP, 10' DWELL	0732	MAX2130EUA+	-65C TO 150C	500	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	MAX2130EUA+	-65C TO 150C	500	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0737	MAX1790EUA+	-65C TO 150C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0737	MAX1790EUA+	-65C TO 150C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0746	MAX668EUB+	-65C TO 150C	500	CYS	80	0
Total:						0	0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0631	MAX4402AUA+	130C, 85% R.H.	96	HRS	27	0
BIASED MOISTURE	0737	MAX1790EUA+	130C, 85% R.H.	96	HRS	50	0
BIASED MOISTURE	0737	MAX1790EUA+	130C, 85% R.H.	96	HRS	50	0
BIASED MOISTURE	0737	MAX1790EUA+	130C, 85% R.H.	96	HRS	50	0
BIASED MOISTURE	0746	MAX668EUB+	130C, 85% R.H.	96	HRS	40	0
Total:						0	0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0631	MAX4402AUA+	130C, 85% R.H.	96	HRS	77	0
HAST, NO BIAS	0718	DS1124	130C, 85% R.H.	96	HRS	77	0
MOISTURE SOAK	0746	MAX668EUB+	130C, 85% R.H.	96	HRS	80	0
Total:						0	0

W/E ENDURANCE AND DATA RET'N

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0718	DS1124	150C	1000	HRS	77	0
STORAGE LIFE	0802	DS3502	150C	1000	HRS	72	0
WRITE CYCLE STRESS (KCYS)	0802	DS3502	25 C, 5.5 V (PSA) & 15.0 V (PSB)	200	KCYS	77	0
STORAGE LIFE	0802	DS3502	150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0802	DS3502	85 C, 5.5 V (PSA) & 15.0 V (PSB)	50	KCYS	77	0
Total:						0	0

FAILURE RATE: MTTF (YRS): 105520 FITS: 1.1