



4/8/2009

RELIABILITY MONITOR REPORT
FOR

CSBGA 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		
	144	CSBGA (Pb-Free)	ASAT-DongGuan (C	25 CSBGA
ATP (Amkor, PI)	256	CSBGA	ATP (Amkor, PI)	256 CSBGA (Pb-Free)
SCS (StatsChipPac Si	81	CSBGA (Pb-Free)	SCS (StatsChipPac Si	100 CSBGA (Pb-Free)
SCS (StatsChipPac)	144	CSBGA (Pb-Free)	SCS (StatsChipPac)	169 CSBGA (Pb-Free)
USG (NSEB) UTAC	256	CSBGA (Pb-Free)		

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 106217 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. At 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: CSBGA
Date Code Range: 0726 to 0810

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0810	DS1852	125C, 5.5 VOLTS	1000 HRS	77	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	0726	DS3100	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0810	DS1852	-55C TO 125C	1000 CYS	76	0	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0726	DS3100	85/85, 2.0 VOLTS	1000 HRS	44	0	
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST, NO BIAS	0726	DS3100	130C, 85% R.H.	96 HRS	77	0	
Total:						0	

W/E ENDURANCE AND DATA RET'N

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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STORAGE LIFE	0810	DS1852	150C	1000 HRS	77	0
WRITE CYCLE STRESS (KCYS)	0810	DS1852	85 C, 5.5 VOLTS	25 KCYS	77	0
Total:						0

Assembly Information:

Package Type: CSBGA (Pb-Free)
 Date Code Range: 0704 to 0810

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0704	MAX5859EXW+	135C	1000 HRS	45	0	
HIGH TEMP OP LIFE	0704	MAX5859EXW+	135C	1000 HRS	45	0	
HIGH TEMP OP LIFE	0704	MAX5859EXW+	135C	1000 HRS	44	0	
HIGH TEMP OP LIFE	0731	DS3104	125C, 3.5V (PSA) & 2.0V (PSB)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0732	806-068302-	135C	500 HRS	77	0	
HIGH TEMP OP LIFE	0732	806-0683-20	135C	1000 HRS	77	0	
HIGH TEMP OP LIFE	0732	806-068302-	135C	500 HRS	77	0	
HIGH TEMP OP LIFE	0732	806-0683-20	135C	1000 HRS	77	0	
HIGH TEMP OP LIFE	0744	DS33X162	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0810	DS26518	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0810	DS26518	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0810	DS26518	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	
Total:						0	

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	0731	806-0683-23+	260C +/-5C	3 PASS	150	0	
CONVECTION REFLOW	0731	806-0683-23+	260C +/-5C	3 PASS	150	0	
CONVECTION REFLOW	0732	806-0683-23+	260C +/-5C	3 PASS	150	0	
CONVECTION REFLOW	0732	806-0683-23+	260C +/-5C	3 PASS	150	0	
CONVECTION REFLOW	0732	806-0683-23+	260C +/-5C	3 PASS	150	0	
CONVECTION REFLOW	0732	806-0683-23+	260C +/-5C	3 PASS	150	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0810	DS26518	150C	1000 HRS	77	0	
STORAGE LIFE	0810	DS26518	150C	1000 HRS	77	0	
STORAGE LIFE	0810	DS26518	150C	1000 HRS	77	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	0729	DS2155	-55C TO 125C	1000 CYS	77	0	

TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0683-23+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0683-23+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0683-23+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0682-23+	-65C TO 150C	500 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0682-23+	-65C TO 150C	500 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0683-23+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0683-23+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	806-0683-23+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0810	DS26518	-55C TO 125C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0810	DS26518	-55C TO 125C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0810	DS26518	-55C TO 125C	1000 CYS	77	0
Total:						0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0810	DS26518	85/85, 2.0 VOLTS	1000 HRS	44	0	
BIASED MOISTURE	0810	DS26518	85/85, 2.0 VOLTS	1000 HRS	44	0	
BIASED MOISTURE	0810	DS26518	85/85, 2.0 VOLTS	1000 HRS	44	0	
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0704	MAX5859EXW+	85 C/85% R.H.	1000 HRS	42	0	
MOISTURE SOAK	0704	MAX5859EXW+	85 C/85% R.H.	1000 HRS	45	0	
Total:						0	

FAILURE RATE: MTTF (YRS): 106217 FITS: 1.1