



10/8/2010

RELIABILITY MONITOR REPORT
FOR

LGA 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	ASSY SITE	PINS	PACKAGE
Carsem-S	48	LGA Flip Chip (Pb-Free)	Carsem-S	64	LGA Flip Chip (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 16092 FITS: 7.1

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 10/1/2009 and 9/30/2010.

Assembly Information:

Package Type: LGA Flip Chip (Pb-Free)

Date Code Range: 0921 to 1029

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0950	MAX3541ELM+	135C	138 HRS	80	0	
HIGH TEMP OP LIFE	1015	MAX3541ELM+	135C	1000 HRS	48	0	
HIGH TEMP OP LIFE	1015	MAX3541ELM+	135C	500 HRS	48	0	
Total:						0	

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	0921	MAX3541ELM+	260C +/-5C	260 PASS	220	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0950	MAX3541ELM+	150C	1000 HRS	45	0	
STORAGE LIFE	0950	MAX3541ELM+	150C	500 HRS	77	0	
STORAGE LIFE	0950	MAX3541ELM+	150C	1000 HRS	77	0	
STORAGE LIFE	0950	MAX3541ELM+	150C	1000 HRS	77	0	
STORAGE LIFE	0950	MAX3541ELM+	150C	500 HRS	77	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	500 CYS	77	0	

TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	500 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1007	MAX2598ELB+	-65C TO 150C	1000 CYS	95	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1029	MAX2598ELB+	-65C TO 150C	1000 CYS	68	0
Total:						0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0933	MAX2599ELB+	85 C/85% R.H.	1000 HRS	48	0	
MOISTURE SOAK	0950	MAX3541ELM+	130C, 85% R.H.	1000 HRS	80	0	
MOISTURE SOAK	0950	MAX3541ELM+	85 C/85% R.H.	1000 HRS	45	0	
MOISTURE SOAK	0950	MAX3541ELM+	85 C/85% R.H.	1000 HRS	45	0	
Total:						0	

FAILURE RATE: MTTF (YRS): 16092 FITS: 7.1