

4/17/2013



RELIABILITY MONITOR REPORT  
FOR

**SOT Package**

**MAXIM INTEGRATED**

160 RIO ROBLES  
SAN JOSE, CA 95134

This Report was prepared by  
**MAXIM INTEGRATED 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		
ATP (Amkor, PI)	6	TSOT (Pb-Free)	Carsem-M	5 SOT23 (Pb-Free)
Carsem-M	6	SOT23 (Pb-Free)	Carsem-M	8 SOT23 (Pb-Free)
UTL Thailand	5	SOT23 (Pb-Free)	UTL Thailand	6 SOT23 (Pb-Free)
UTL Thailand	8	SOT23 (Pb-Free)	UTL Thailand	5 TSOT (Pb-Free)

The calculated failure rate for this assembly is:

**FAILURE RATE: MTTF (YRS): 103778 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 4/1/2012 and 3/31/2013.

**Assembly Information:**

Package Type: SOT23 (Pb-Free)

Date Code Range: 1005 to 1235

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1005	MAX4434EUK+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1010	MAX8873REUK/V+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1135	MAX9017AEKA+	135°C	1000 HRS	93	0	
HIGH TEMP OP LIFE	1206	MAX6070BAUT25+T	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1207	MAX9017AEKA+	135°C	1000 HRS	90	0	
HIGH TEMP OP LIFE	1213	MAX44250AUK+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1221	MAX6070AAUT41+T	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1221	MAX6070AAUT12+T	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1231	MAX14631EKA+T	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1235	MAX5048CAUT+	135°C	192 HRS	45	0	
HIGH TEMP OP LIFE	1235	MAX5048CAUT+	135°C	192 HRS	45	0	
HIGH TEMP OP LIFE	1235	MAX5048CAUT+	135°C	192 HRS	45	0	
HIGH TEMP OP LIFE	1235	MAX5048CAUT+	135°C	192 HRS	45	0	
<b>Total:</b>						<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1143	MAX6320PUK29DY+	150°C	1000 HRS	50	0	
STORAGE LIFE	1152	MAX4791EUK/V+T	150°C	500 HRS	45	0	
STORAGE LIFE	1206	MAX6070BAUT25+T	150°C	1000 HRS	77	0	

STORAGE LIFE	1208	MAX6318MHUK46C Y+	150°C	1000 HRS	50	0
STORAGE LIFE	1221	MAX6070AAUT41+T	150°C	1000 HRS	80	0
STORAGE LIFE	1221	MAX6070AAUT12+T	150°C	1000 HRS	80	0
<b>Total:</b>					<b>0</b>	<b>0</b>

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#### TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1143	MAX6320PUK29DY+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1147	MAX6319LHUK46C+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1151	MAX4791EUK/V+T	-65C TO 150C	500 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1152	MAX4791EUK/V+T	-65C TO 150C	500 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1206	MAX6070BAUT25+T	-65C TO 150C	1000 CYS	76	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1206	MAX6070BAUT25+T	-65C TO 150C	1000 CYS	30	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1208	MAX6318MHUK46C Y+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1208	MAX6322HPUK46C+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1219	MAX1697UEUT+T	-65C TO 150C	1000 CYS	79	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1221	MAX6070AAUT25+T	-65C TO 150C	1000 CYS	110	1	
TEMP CYCLE, 5' RAMP, 10' DWELL	1221	MAX6070AAUT25+T	-65C TO 150C	1010 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1221	MAX6070AAUT41+T	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1221	MAX6070AAUT12+T	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1222	MAX6321HPUK46CY +	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1224	MAX1472AKA-T10	-65C TO 150C	1000 CYS	79	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1225	MAX1472AKA-T10	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1225	MAX1472AKA-T10	-65C TO 150C	1000 CYS	78	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	MAX5048CAUT+T	-65C TO 150C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	MAX5048CAUT+T	-65C TO 150C	1000 CYS	76	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	MAX5048CAUT+T	-65C TO 150C	1000 CYS	77	0	
<b>Total:</b>						<b>1</b>	

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#### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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BIASED MOISTURE	1013	MAX6418UK46+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1028	MAX9017AEKA+	130C, 85% R.H.	100	HRS	32	0
BIASED MOISTURE	1113	MAX6414UK46+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1143	MAX6320PUK29DY+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1147	MAX6319LHUK46C+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1208	MAX6322HPUK46C+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1221	MAX6070AAUT41+T	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1221	MAX6070AAUT12+T	130C, 85% R.H.	100	HRS	80	0
<b>Total:</b>						<b>0</b>	<b>0</b>

#### UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1028	MAX9017AEKA+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1047	MAX9017AEKA+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1114	MAX9017AEKA+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1208	MAX6322HPUK46C+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1234	MAX5048CAUT+T	85 C/85% R.H.	1000	HRS	45	0
MOISTURE SOAK	1234	MAX5048CAUT+T	85 C/85% R.H.	1000	HRS	45	0
MOISTURE SOAK	1234	MAX5048CAUT+T	130C, 85% R.H.	1000	HRS	80	0
<b>Total:</b>						<b>0</b>	<b>0</b>

#### Assembly Information:

Package Type: TSOT (Pb-Free)

Date Code Range: 1237 to 1246

#### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1237	MAX8888EZK18/V+T	150°C	500	HRS	45	0
STORAGE LIFE	1240	MAX6896AAZT/V+	150°C	1000	HRS	45	0
<b>Total:</b>						<b>0</b>	<b>0</b>

#### TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1237	MAX8888EZK18/V+T	-65C TO 150C	500	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1240	MAX6896AAZT/V+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1240	MAX6896AAZT/V+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1240	MAX6896AAZT/V+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1246	MAX8877EZK33+GF 4	-65C TO 150C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1246	MAX8877EZK33+GF 4	-65C TO 150C	1000	CYS	77	0

TEMP CYCLE, 5' RAMP, 10' DWELL	1246	MAX8877EZK33+GF 4	-65C TO 150C	1000 CYS	77	0
<b>Total:</b>						<b>0</b>

**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1237	MAX8888EZK18/V+T	130C, 85% R.H.	100	HRS	77	0
BIASED MOISTURE	1237	MAX8888EZK18/V+T	130C, 85% R.H.	96	HRS	77	0
BIASED MOISTURE	1240	MAX6896AAZT/V+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1240	MAX6896AAZT/V+	130C, 85% R.H.	100	HRS	79	0
BIASED MOISTURE	1240	MAX6896AAZT/V+	130C, 85% R.H.	100	HRS	80	0
<b>Total:</b>						<b>0</b>	

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1237	MAX8888EZK18/V+T	130C, 85% R.H.	96	HRS	77	0
MOISTURE SOAK	1240	MAX6896AAZT/V+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1240	MAX6896AAZT/V+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1240	MAX6896AAZT/V+	130C, 85% R.H.	100	HRS	80	0
<b>Total:</b>						<b>0</b>	

**FAILURE RATE: MTTF (YRS): 103778 FITS: 1.1**