

10/23/2014



RELIABILITY MONITOR REPORT  
FOR

**uMAX 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)	8	uMax (Pb-Free)	ATP (Amkor, PI)	10 uMax (Pb-Free)
UTL (NSEB) UTAC	8	uMax (Pb-Free)	UTL (NSEB) UTAC	10 uMax (Pb-Free)

The calculated failure rate for this assembly is:

**FAILURE RATE: MTTF (YRS): 30801 FITS: 3.7**

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 10/1/2013 and 9/30/2014

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### Assembly Information:

Package Type: uMax (Pb-Free)  
Date Code Range: 1308 to 1422

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### OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1330	MAX44285TAUA+	135°C	308 HRS	80	0	
HIGH TEMP OP LIFE	1330	MAX44285FAUA+	135°C	168 HRS	80	0	
HIGH TEMP OP LIFE	1330	MAX44285FAUA+	135°C	692 HRS	80	0	
HIGH TEMP OP LIFE	1334	DS1088E	125C, 3.6 VOLTS	192 HRS	77	0	
HIGH TEMP OP LIFE	1334	MAX5704AUB+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1339	MAX44242AUA+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1340	MAX17552AUB+	135°C	192 HRS	76	1	
HIGH TEMP OP LIFE	1341	MAX3747AEUB+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1352	MAX669EUB/V+	135°C	192 HRS	79	0	
HIGH TEMP OP LIFE	1352	MAX669EUB/V+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1412	MAX44285TAUA+	135°C	692 HRS	80	0	
HIGH TEMP OP LIFE	1415	MAX44285TAUA+	135°C	524 HRS	80	0	
HIGH TEMP OP LIFE	1415	MAX44285TAUA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1418	MAX9611AUB+	135°C	192 HRS	48	0	
<b>Total:</b>						<b>1</b>	

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### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1330	MAX44285FAUA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1334	MAX5704AUB+	150°C	1000 HRS	80	0	
STORAGE LIFE	1352	MAX669EUB/V+	150°C	500 HRS	47	0	

STORAGE LIFE	1407	MAX1744EUB/V+	150°C	500	HRS	80	0
STORAGE LIFE	1412	MAX44285TAUA+	150°C	1000	HRS	80	0
STORAGE LIFE	1415	MAX44285TAUA=	150°C	1000	HRS	79	0
<b>Total:</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	1330	MAX44285TAUA+	-65C TO +150C (Condition C)	1000	CYS	76	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX44285FAUA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1334	MAX5704AUB+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX669EUB/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX669EUB/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX669EUB/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1407	MAX1744EUB/V+	-65C TO +150C (Condition C)	200	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1412	MAX44285TAUA+	-65C TO +150C (Condition C)	500	CYS	79	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1415	MAX44285TAUA=	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1422	MAX44285FAUA+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1422	MAX44285FAUA+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1422	MAX44285FAUA+	-65C TO +150C (Condition C)	1000	CYS	80	0
<b>Total:</b>							<b>0</b>

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### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1330	MAX44285TAUA+	130C, 85% R.H.	100	HRS	77	0
BIASED MOISTURE	1330	MAX44285TAUA+	130C, 85% R.H.	100	HRS	30	0
BIASED MOISTURE	1330	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1334	MAX5704AUB+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1352	MAX669EUB/V+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1352	MAX669EUB/V+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1352	MAX669EUB/V+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1412	MAX44285TAUA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1415	MAX44285TAUA=	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1422	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1422	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1422	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0

**Total: 0**

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**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1308	MAX1745AUB+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1308	MAX1745AUB+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1308	MAX1745AUB+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1352	MAX669EUB/V+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1352	MAX669EUB/V+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1352	MAX669EUB/V+	130C, 85% R.H.	100	HRS	80	0

**Total: 0**

**FAILURE RATE: MTTF (YRS): 30801 FITS: 3.7**