

4/23/2015



**RELIABILITY MONITOR REPORT
FOR**

SOIC 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		
ASE Chung-Li	16	SOIC-HYB (Pb-Free)	ATP (Amkor, PI)	8 SOIC (Pb-Free)
ATP (Amkor, PI)	8	SOIC-EP (Pb-Free)	Carsem-M	8 SOIC (Pb-Free)
Carsem-M	20	SOIC (Pb-Free)	UTL (NSEB) UTAC	8 SOIC (Pb-Free)
UTL (NSEB) UTAC	8	SOIC-EP (Pb-Free)		

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 228311 FITS: 0.5

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 4/1/2014 and 3/31/2015.

Assembly Information:

Package Type: SOIC (Pb-Free)

Date Code Range: 1337 to 1442

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1337	MAX6174BASA+	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1344	MAX6166AESA+	135°C	1000 HRS	26	0	
HIGH TEMP OP LIFE	1403	MAX6166AESA+	135°C	1000 HRS	26	0	
HIGH TEMP OP LIFE	1403	MAX6166AESA+	135°C	1000 HRS	26	0	
HIGH TEMP OP LIFE	1403	MAX6175BASA+	135°C	1000 HRS	77	0	
HIGH TEMP OP LIFE	1403	MAX6175BASA+	135°C	1000 HRS	68	0	
HIGH TEMP OP LIFE	1405	MAX6175BASA+	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1409	MAX6166AESA+	135°C	1000 HRS	26	0	
HIGH TEMP OP LIFE	1425	MAX6175BASA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1425	MAX6175BASA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1425	MAX6175BASA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1432	MAX4364ESA+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1434	MAX6126AASA30+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1437	MAX1951ESA+	135°C	1000 HRS	76	0	
HIGH TEMP OP LIFE	1437	MAX1951ESA+	135°C	1000 HRS	76	0	
HIGH TEMP OP LIFE	1437	MAX1951ESA+	135°C	1000 HRS	76	0	
HIGH TEMP OP LIFE	1438	MAX889TESA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1439	MAX1951ESA+	135°C	500 HRS	80	0	

HIGH TEMP OP LIFE	1441	MAX4364ESA/V+	135°C	192	HRS	80	0
HIGH TEMP OP LIFE	1442	MAX4364ESA/V+	135°C	192	HRS	80	0
Total:						0	0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1337	MAX6174BASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1344	MAX6166AESA+	150°C	1000 HRS	77	0	
STORAGE LIFE	1344	MAX6166AESA+	150°C	1000 HRS	77	0	
STORAGE LIFE	1344	MAX6166AESA+	150°C	1000 HRS	77	0	
STORAGE LIFE	1402	MAX492CSA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1402	MAX492CSA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1402	MAX492CSA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1402	ICL7612BESA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1402	ICL7612BESA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1402	ICL7612BESA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1403	MAX6175BASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1403	MAX6175BASA+	150°C	1000 HRS	78	0	
STORAGE LIFE	1404	MAX186CCWP+	150°C	1000 HRS	80	0	
STORAGE LIFE	1405	MAX6175BASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1409	MAX6166AESA+	150°C	1000 HRS	77	0	
STORAGE LIFE	1425	MAX6175BASA+	150°C	1000 HRS	50	0	
STORAGE LIFE	1434	MAX6126AASA30+	150°C	1000 HRS	80	0	
STORAGE LIFE	1438	MAX889TESA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1442	MAX4364ESA+	150°C	500 HRS	50	0	
Total:						0	0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1337	MAX6174BASA+	-65C TO +150C (Condition C)	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1344	MAX6166AESA+	-65C TO +150C (Condition C)	525 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1402	MAX492CSA+	-65C TO +150C (Condition C)	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1402	MAX492CSA+	-65C TO +150C (Condition C)	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1402	MAX492CSA+	-65C TO +150C (Condition C)	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1402	ICL7612BESA+	-65C TO +150C (Condition C)	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1402	ICL7612BESA+	-65C TO +150C (Condition C)	1000 CYS	80	0	

TEMP CYCLE, 5' RAMP, 10' DWELL	1402	ICL7612BESA+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6166AESA+	-65C TO +150C (Condition C)	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6166AESA+	-65C TO +150C (Condition C)	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6166AESA+	-65C TO +150C (Condition C)	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6175BASA+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6175BASA+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1404	MAX186CCWP+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1409	MAX6166AESA+	-65C TO +150C (Condition C)	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1425	MAX6175BASA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1425	MAX6175BASA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1425	MAX6175BASA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1434	MAX6126AASA30+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1438	MAX889TESA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1442	MAX4364ESA+	-65C TO +150C (Condition C)	500	CYS	80	0
Total:						0	0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1337	MAX6174BASA+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1344	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0
BIASED MOISTURE	1344	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0
BIASED MOISTURE	1344	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0
BIASED MOISTURE	1403	MAX6175BASA+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1403	MAX6175BASA+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1404	MAX186CCWP+	130C, 85% R.H.	100	HRS	26	0
BIASED MOISTURE	1405	MAX6175BASA+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1409	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0
BIASED MOISTURE	1425	MAX6175BASA+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1425	MAX6175BASA+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1425	MAX6175BASA+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1438	MAX889TESA+	130C, 85% R.H.	100	HRS	79	0
BIASED MOISTURE	1442	MAX4364ESA+	130C, 85% R.H.	100	HRS	80	0
Total:						0	0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1337	MAX6174BASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	400 HRS	77	0	
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	400 HRS	77	0	
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	400 HRS	77	0	
MOISTURE SOAK	1403	MAX6175BASA+	130C, 85% R.H.	400 HRS	80	1	
MOISTURE SOAK	1403	MAX6175BASA+	130C, 85% R.H.	400 HRS	80	0	
MOISTURE SOAK	1405	MAX6175BASA+	130C, 85% R.H.	400 HRS	76	0	
MOISTURE SOAK	1409	MAX6166AESA+	130C, 85% R.H.	400 HRS	45	0	
MOISTURE SOAK	1425	MAX6175BASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1425	MAX6175BASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1425	MAX6175BASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1442	MAX4364ESA+	130C, 85% R.H.	100 HRS	80	0	
Total:						1	

Assembly Information:

Package Type: SOIC-EP (Pb-Free)

Date Code Range: 1345 to 1409

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1345	MAX16910CASA9 +	135°C	500 HRS	79	0	
HIGH TEMP OP LIFE	1352	MAX16910CASA9 +	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1352	MAX16910CASA9 +	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1352	MAX16910CASA9 +	135°C	500 HRS	80	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1403	MAX16910CASA8 +	150°C	1000 HRS	80	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1345	MAX16910CASA9 +	-65C TO +150C (Condition C)	500 CYS	45	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1345	MAX16910CASA9 +	-65C TO +150C (Condition C)	1000 CYS	45	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX16910CASA8 +	-65C TO +150C (Condition C)	500 CYS	80	0	

TEMP CYCLE, 5' RAMP, 10' DWELL	1406	MAX16910CASA8 +	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1409	MAX16910CASA9 +	-65C TO +150C (Condition C)	500	CYS	80	0
Total:						0	0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1403	MAX16910CASA8 +	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1406	MAX16910CASA8 +	130C, 85% R.H.	100	HRS	80	0
Total:						0	0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1403	MAX16910CASA8 +	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1406	MAX16910CASA8 +	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1409	MAX16910CASA9 +	130C, 85% R.H.	100	HRS	80	0
Total:						0	0

Assembly Information:

Package Type: SOIC-HYB (Pb-Free)
Date Code Range: N/A to N/A

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	N/A	MAX14934EAW+	-65C TO +150C (Condition C)	1000	CYS	493	0
Total:						0	0

FAILURE RATE: MTTF (YRS): 228311 FITS: 0.5