

4/16/2014



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 (Pb-Free)	ATP	8 SOIC (Pb-Free)
ATP	14	SOIC (Pb-Free)	ATP	16 SOIC (Pb-Free)
Carsem-M	8	SOIC (Pb-Free)	UTL	8 SOIC (Pb-Free)
UTL	8	SOIC-EP (Pb-Free)		

The calculated failure rate for this assembly is:

**FAILURE RATE: MTTF (YRS): 96129 FITS: 1.2**

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 4/1/2013 and 3/31/2014.

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### Assembly Information:

Package Type: SOIC (Pb-Free)

Date Code Range: 1211 to 1345

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### OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1211	MAX913CSA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1212	MAX604ESA+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1213	MAX843ISA+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1227	MAX13432EESD	135°C	192 HRS	32	0	
HIGH TEMP OP LIFE	1230	MAX313LESE+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1236	MAX15013AASA+	135°C	1000 HRS	44	0	
HIGH TEMP OP LIFE	1244	DS2483	125C, 5.25 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	1247	DS2433	125C, 6.0 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	1247	DS2433	125C, 6.0 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	1319	DS2484	125C, 5.25 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	1330	MAX6175BASA/V+	135°C	284 HRS	80	0	
HIGH TEMP OP LIFE	1335	MAX6175BASA/V+	135°C	216 HRS	80	0	
HIGH TEMP OP LIFE	1335	MAX6175BASA/V+	135°C	716 HRS	78	0	
HIGH TEMP OP LIFE	1338	MAX14781EESA+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1341	DS1629	125C, 5.5 VOLTS	192 HRS	80	0	
HIGH TEMP OP LIFE	1344	MAX6166AESA+	135°C	1000 HRS	26	0	
HIGH TEMP OP LIFE	1344	MAX6166AESA+	135°C	1000 HRS	26	0	
HIGH TEMP OP LIFE	1344	MAX6166AESA+	135°C	500 HRS	26	0	

HIGH TEMP OP LIFE	1345	MAX14784EASD+	135°C	192	HRS	32	0
HIGH TEMP OP LIFE	1345	MAX14784EASD+	135°C	192	HRS	48	0
<b>Total:</b>						<b>0</b>	<b>0</b>

### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1247	DS2433	150°C	1000	HRS	77	0
STORAGE LIFE	1247	DS2433	150°C	1000	HRS	77	0
STORAGE LIFE	1247	DS2433	150°C	1000	HRS	77	0
STORAGE LIFE	1328	MAX6175BASA/V+	150°C	500	HRS	80	0
STORAGE LIFE	1340	MAX4364ESA+CGL	150°C	1000	HRS	50	0
STORAGE LIFE	1341	MAX4364ESA+CGL	150°C	1000	HRS	50	0
STORAGE LIFE	1341	MAX4364ESA+CGL	150°C	1000	HRS	50	0
STORAGE LIFE	1341	MAX4364ESA+CGL	150°C	500	HRS	50	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
<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	1247	DS2433	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1247	DS2433	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1247	DS2433	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1308	MAX14935AAWE+	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1315	MAX14930FASE+	-65C TO 150C	500	CYS	50	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1326	MAX14931EASE+	-65C TO 150C	1000	CYS	200	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX14931EASE+	-65C TO 150C	1000	CYS	199	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX6175BASA/V+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1335	MAX6175BASA/V+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1340	MAX4364ESA+CGL	-65C TO 150C	500	CYS	84	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1340	MAX4364ESA+CGL	-65C TO 150C	1000	CYS	79	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1341	MAX4364ESA+CGL	-65C TO 150C	1000	CYS	84	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1341	MAX4364ESA+CGL	-65C TO 150C	500	CYS	89	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1341	MAX4364ESA+CGL	-65C TO 150C	500	CYS	85	0

TEMP CYCLE, 5' RAMP, 10' DWELL	1341	MAX4364ESA+CGL	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1344	MAX6166AESA+	-65C TO 150C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1344	MAX6166AESA+	-65C TO 150C	1000	CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1344	MAX6166AESA+	-65C TO 150C	1000	CYS	77	0
<b>Total:</b>						<b>0</b>	<b>0</b>

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### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST	1247	DS2433	130C, 85%R.H., 5.5V	96	HRS	78	0
HAST	1247	DS2433	130C, 85%R.H., 5.5V	96	HRS	77	0
HAST	1247	DS2433	130C, 85%R.H., 5.5V	96	HRS	77	0
BIASED MOISTURE	1328	MAX6175BASA/V+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1330	MAX6175BASA/V+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1340	MAX4364ESA+CGL	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1341	MAX4364ESA+CGL	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1341	MAX4364ESA+CGL	130C, 85% R.H.	100	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
<b>Total:</b>						<b>0</b>	<b>0</b>

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### UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1308	MAX14935AAWE+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1326	MAX14931EASE+	130C, 85% R.H.	100	HRS	200	0
MOISTURE SOAK	1328	MAX6175BASA/V+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1330	MAX14931EASE+	130C, 85% R.H.	100	HRS	200	0
MOISTURE SOAK	1330	MAX6175BASA/V+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1340	MAX4364ESA+CGL	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1341	MAX4364ESA+CGL	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1341	MAX4364ESA+CGL	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	392	HRS	45	0
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	392	HRS	45	0
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	392	HRS	45	0
<b>Total:</b>						<b>0</b>	<b>0</b>

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### Assembly Information:

Package Type: SOIC-EP (Pb-Free)  
Date Code Range: 1345 to 1352

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**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1345	MAX16910CASA9/V +	150°C	1000 HRS	80	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	1345	MAX16910CASA9/V +	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX16910CASA9/V +	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX16910CASA9/V +	-65C TO 150C	500 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	1345	MAX16910CASA9/V +	130C, 85% R.H.	100 HRS	79	0	
BIASED MOISTURE	1352	MAX16910CASA9/V +	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1352	MAX16910CASA9/V +	130C, 85% R.H.	100 HRS	80	0	
<b>Total:</b>						<b>0</b>	

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**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1345	MAX16910CASA9/V +	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1352	MAX16910CASA9/V +	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1352	MAX16910CASA9/V +	130C, 85% R.H.	100 HRS	80	0	
<b>Total:</b>						<b>0</b>	

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**FAILURE RATE: MTTF (YRS): 96129 FITS: 1.2**