

4/17/2013



**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	8	SOIC Stacked Die Wire Bond (Pb-Free)	ASE Shanghai China	8 SOIC (Pb-Free)
ATK	32	SOIC	ATP (Amkor, PI)	32 SOIC
ATP (Amkor, PI)	8	SOIC (Pb-Free)	ATP (Amkor, PI)	14 SOIC (Pb-Free)
ATP (Amkor, PI)	16	SOIC (Pb-Free)	ATP (Amkor, PI)	8 SOIC-EP (Pb-Free)
ATP (Amkor, PI)	28	SOIC-Hyb (Pb-Free)	Carsem-M	32 SOIC
Carsem-M	8	SOIC (Pb-Free)	Carsem-M	16 SOIC (Pb-Free)
Cirtek	32	SOIC	Unisem Malaysia	8 SOIC (Pb-Free)
UTL Thailand	8	SOIC (Pb-Free)	UTL Thailand	16 SOIC (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 142694 FITS: 0.8

The parameters used to calculate this failure rate are as follows:

Cf: 60% Ea: 0.7 Tu: 25 °C

The reliability data follows. A 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: SOIC
Date Code Range: 1214 to 1243

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH VOLTAGE LIFE	1214	R1LV0408DS	125C, 3.6 VOLTS	168 HRS	100	0	
HIGH VOLTAGE LIFE	1214	R1LV0408DS	125C, 3.6 VOLTS	168 HRS	100	0	
HIGH VOLTAGE LIFE	1215	R1LV0408DS	125C, 3.6 VOLTS	168 HRS	100	0	
HIGH VOLTAGE LIFE	1229	R1LP0408DS	125C, 5.5 VOLTS	168 HRS	100	0	
HIGH VOLTAGE LIFE	1234	R1LP0408DS	125C, 5.5 VOLTS	168 HRS	100	0	
HIGH VOLTAGE LIFE	1237	R1LP0408DS	125C, 5.5 VOLTS	168 HRS	100	0	
HIGH VOLTAGE LIFE	1243	R1LV0408DS	125C, 3.6 VOLTS	168 HRS	100	1	
Total:						1	

Assembly Information:

Package Type: SOIC (Pb-Free)
Date Code Range: 1032 to 1248

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1032	MAX6175BASA+	135°C	1000 HRS	45	0	
HIGH TEMP OP LIFE	1033	MAX6175BASA+	135°C	1000 HRS	76	0	

HIGH TEMP OP LIFE	1131	MAX4257ESA+	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1144	MAX913CSA+	135°C	1000	HRS	78	0
HIGH TEMP OP LIFE	1144	MAX913CSA+	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1147	MAX14850ASE+	135°C	192	HRS	80	0
HIGH TEMP OP LIFE	1152	MAX13021ASA+	135°C	1000	HRS	97	0
HIGH TEMP OP LIFE	1152	MAX13021ASA+	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1209	MAX4257ESA+	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1209	MAX4257ESA+	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1210	DS1868B	125C, 5.5 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1212	MAX16822AASA+	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1213	MAX16130ASA+	135°C	192	HRS	80	0
HIGH TEMP OP LIFE	1224	DS1683	125C, 5.5 VOLTS	240	HRS	80	0
HIGH TEMP OP LIFE	1224	DS18S20	125C, 5.5 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1224	MAX44248ASA+	135°C	240	HRS	80	0
HIGH TEMP OP LIFE	1225	DS75	125C, 5.5 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1227	MAX13432EESD+	135°C	192	HRS	48	0
HIGH TEMP OP LIFE	1230	MAX6175BASA+	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1233	MAX14650ESE+	135°C	192	HRS	48	0
HIGH TEMP OP LIFE	1234	DS75	125C, 5.5 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1234	DS2433	125C, 6.0 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	1234	DS2433	125C, 6.0 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	1234	DS2433	125C, 6.0 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	1243	MAX253ESA+	135°C	192	HRS	80	0
HIGH TEMP OP LIFE	1243	MAX253ESA+	135°C	192	HRS	80	0
HIGH TEMP OP LIFE	1248	MAX7463USA+	135°C	192	HRS	48	0
HIGH TEMP OP LIFE	1248	MAX7463USA+	135°C	192	HRS	32	0
Total:						0	0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1152	MAX13021ASA+	150°C	1000	HRS	50	0
STORAGE LIFE	1204	MAX1240AESA/V+	150°C	500	HRS	50	0
STORAGE LIFE	1209	MAX4257ESA+	150°C	500	HRS	80	0
STORAGE LIFE	1209	MAX4257ESA+	150°C	500	HRS	80	0
STORAGE LIFE	1224	DS18S20	150°C	1000	HRS	80	0
STORAGE LIFE	1225	DS75	150°C	1000	HRS	80	0
STORAGE LIFE	1227	MAX13432EESD+	150°C	1000	HRS	80	0
STORAGE LIFE	1234	DS75	150°C	1000	HRS	80	0
STORAGE LIFE	1234	DS2433	150°C	1000	HRS	77	0

STORAGE LIFE	1234	DS2433	150°C	1000 HRS	77	0
STORAGE LIFE	1234	DS2433	150°C	1000 HRS	77	0
STORAGE LIFE	1243	MAX253ESA+	150°C	1000 HRS	80	0
Total:					0	0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1152	MAX13021ASA+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1201	SD220	-55C TO 125C	500 CYS	76	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1204	MAX1240AESA/V+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1204	MAX1240AESA/V+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1209	MAX4257ESA+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1209	MAX4257ESA+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1224	DS18S20	-55C TO 125C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1225	DS75	-55C TO 125C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1227	MAX13432EESD+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX4395ESD+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1230	MAX313LESE+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1232	MAX202EWE+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	DS75	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	DS2433	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	DS2433	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	DS2433	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	MAX604CSA+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1234	MAX604CSA+	-65C TO 150C	1000 CYS	79	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1243	MAX604CSA+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1243	MAX253ESA+	-65C TO 150C	500 CYS	80	0	
Total:					0	0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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BIASED MOISTURE	1152	MAX13021ASA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1152	MAX13021ASA+	130C, 85% R.H.	100	HRS	80	0
HAST	1224	DS18S20	130C, 85%R.H., 5.5V	96	HRS	80	0
HAST	1225	DS75	130C, 85%R.H., 5.5V	96	HRS	80	0
BIASED MOISTURE	1227	MAX13432EESD+	130C, 85% R.H.	100	HRS	32	0
HAST	1234	DS75	130C, 85%R.H., 5.5V	96	HRS	80	0
HAST	1234	DS2433	130C, 85%R.H., 5.5V	96	HRS	77	0
HAST	1234	DS2433	130C, 85%R.H., 5.5V	96	HRS	77	0
HAST	1234	DS2433	130C, 85%R.H., 5.5V	96	HRS	77	0
BIASED MOISTURE	1243	MAX253ESA+	130C, 85% R.H.	100	HRS	80	0
Total:							0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST, NO BIAS	1201	SD220	130C, 85% R.H.	96	HRS	80	0
HAST, NO BIAS	1225	DS75	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1227	MAX13432EESD+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1229	MAX4395ESD+	130C, 85% R.H.	100	HRS	80	0
HAST, NO BIAS	1230	DS75	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1230	MAX313LESE+	130C, 85% R.H.	100	HRS	80	0
HAST, NO BIAS	1234	DS75	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1243	MAX253ESA+	130C, 85% R.H.	100	HRS	80	0
Total:							0

Assembly Information:

Package Type: SOIC Stacked Die Wire Bond (Pb-Free)
Date Code Range: 1150 to 1221

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1150	DS3232M	125C, 4.7 VOLTS (PSA)	192	HRS	80	0
HIGH TEMP OP LIFE	1221	DS3231M	125C, 5.5 VOLTS	1000	HRS	80	0
Total:							0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1221	DS3231M	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	1221	DS3231M	-55C TO 125C	1000	CYS	80	0

Total: 0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST	1221	DS3231M	130C, 85%R.H., 5.5V	96 HRS	80	0	
Total:						0	

Assembly Information:

Package Type: SOIC-EP (Pb-Free)
Date Code Range: 1206 to 1206

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1206	MAX5023LASA+	135°C	1000 HRS	45	0	
HIGH TEMP OP LIFE	1206	MAX5023LASA+	135°C	1000 HRS	45	0	
HIGH TEMP OP LIFE	1206	MAX5023LASA+	135°C	1000 HRS	45	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1206	MAX5023LASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1206	MAX5023LASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1206	MAX5023LASA+	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	1206	MAX5023LASA+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1206	MAX5023LASA+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1206	MAX5023LASA+	-65C TO 150C	1000 CYS	80	0	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1206	MAX5023LASA+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1206	MAX5023LASA+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1206	MAX5023LASA+	130C, 85% R.H.	100 HRS	80	0	
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1206	MAX5023LASA+	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1206	MAX5023LASA+	130C, 85% R.H.	100 HRS	80	0	

MOISTURE SOAK	1206	MAX5023LASA+	130C, 85% R.H.	100	HRS	80	0
						Total:	0

Assembly Information:

Package Type: SOIC-Hyb (Pb-Free)
 Date Code Range: 1229 to 1229

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1229	MAX3535EEWI+	135°C	1000 HRS	47	0	
HIGH TEMP OP LIFE	1229	MAX3535EEWI+	135°C	500 HRS	47	0	
HIGH TEMP OP LIFE	1229	MAX3535EEWI+	135°C	1000 HRS	47	0	
HIGH TEMP OP LIFE	1229	MAX3535EEWI+	135°C	500 HRS	47	0	
HIGH TEMP OP LIFE	1229	MAX3535EEWI+	135°C	1000 HRS	47	0	
						Total:	0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1229	MAX3535EEWI+	150°C	1000 HRS	78	0	
STORAGE LIFE	1229	MAX3535EEWI+	150°C	1000 HRS	78	0	
STORAGE LIFE	1229	MAX3535EEWI+	150°C	1000 HRS	78	0	
						Total:	0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX3535EEWI+	-65C TO 150C	1000 CYS	78	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX3535EEWI+	-65C TO 150C	1000 CYS	78	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX3535EEWI+	-65C TO 150C	1000 CYS	78	0	
						Total:	0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1229	MAX3535EEWI+	130C, 85% R.H.	100 HRS	54	0	
BIASED MOISTURE	1229	MAX3535EEWI+	130C, 85% R.H.	100 HRS	54	0	
BIASED MOISTURE	1229	MAX3535EEWI+	130C, 85% R.H.	100 HRS	54	0	
						Total:	0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1229	MAX3535EEWI+	130C, 85% R.H.	100 HRS	77	0	
MOISTURE SOAK	1229	MAX3535EEWI+	130C, 85% R.H.	100 HRS	77	0	
MOISTURE SOAK	1229	MAX3535EEWI+	130C, 85% R.H.	100 HRS	77	0	
						Total:	0

FAILURE RATE: MTTF (YRS): 142694 FITS: 0.8