

7/10/2017



**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		
ASE Weihai	5	SOT23 (Pb-Free)	ASE Weihai	8 SOT23 (Pb-Free)
ATP (Amkor, PI)	6	TSOT (Pb-Free)	CARSEM-M	5 SOT23 (Pb-Free)
CARSEM-M	6	SOT23 (Pb-Free)	CARSEM-S	6 SOT23 (Pb-Free)
UTL (NSEB) UTAC	6	SOT23	UTL (NSEB) UTAC	3 SOT23 (Pb-Free)
UTL (NSEB) UTAC	4	SOT23 (Pb-Free)	UTL (NSEB) UTAC	6 SOT23 (Pb-Free)
UTL (NSEB) UTAC	8	SOT23 (Pb-Free)		

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 313830 FITS: 0.4

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 4/1/2017 and 6/30/2017.

Assembly Information:

Package Type: SOT23
Date Code Range: 1234 to 1234

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1234	MAX5048CAUT+T	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1234	MAX5048CAUT+T	130C, 85% R.H.	100 HRS	80	0	
Total:						0	

Assembly Information:

Package Type: SOT23 (Pb-Free)
Date Code Range: 1037 to 1651

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1037	MAX2607EUT+	135°C	1000 HRS	50	0	
HIGH TEMP OP LIFE	1037	MAX2607EUT+	135°C	1000 HRS	30	0	
HIGH TEMP OP LIFE	1229	MAX16053AUT+	135°C	1000 HRS	90	0	
HIGH TEMP OP LIFE	1328	MAX16053AUT+	135°C	1000 HRS	89	0	
HIGH TEMP OP LIFE	1426	MAX16053AUT+	135°C	1000 HRS	90	0	
HIGH TEMP OP LIFE	1531	MAX44251AKA+	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1542	MAX16086AUS18E/V +T	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1544	MAX16086AUS18E/V +T	135°C	1000 HRS	80	0	

HIGH TEMP OP LIFE	1606	MAX6394US480D3/V +T	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1606	MAX6394US480D3/V +T	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1606	MAX6394US480D3/V +T	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1607	MAX6070AAUT50/V+	135°C	500	HRS	73	0
HIGH TEMP OP LIFE	1607	MAX6070AAUT50+T	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1607	MAX6070AAUT50/V+	135°C	500	HRS	100	0
HIGH TEMP OP LIFE	1607	MAX6070AAUT50/V+	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1607	MAX6070AAUT50/V+	135°C	500	HRS	77	0
HIGH TEMP OP LIFE	1607	MAX6070AAUT50/V+	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1617	MAX9017AEKA/V+	135°C	1000	HRS	78	0
HIGH TEMP OP LIFE	1617	MAX9017AEKA/V+	135°C	1000	HRS	78	0
HIGH TEMP OP LIFE	1617	MAX9017AEKA/V+	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1622	MAX6414UK31/V+	135°C	1000	HRS	45	0
HIGH TEMP OP LIFE	1651	MAX9017AEKA/V+T	135°C	1000	HRS	81	0
HIGH TEMP OP LIFE	1651	MAX9017AEKA/V+T	135°C	1000	HRS	82	0
HIGH TEMP OP LIFE	1651	MAX9017AEKA/V+T	135°C	1000	HRS	83	0
Total:							0

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BOND STRENGTH	1648	MAX16135HRB/V+T	> 5 GMS	200	WIRES	40	0
BOND STRENGTH	1648	MAX16135HRB/V+T	> 5 GMS	200	WIRES	40	0
Total:							0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1037	MAX2607EUT+	150°C	1000	HRS	80	0
STORAGE LIFE	1229	MAX16053AUT+	150°C	1000	HRS	50	0
STORAGE LIFE	1328	MAX16053AUT+	150°C	1000	HRS	50	0
STORAGE LIFE	1426	MAX16053AUT+	150°C	1000	HRS	47	0
STORAGE LIFE	1531	MAX44251AKA+	150°C	1000	HRS	80	0
STORAGE LIFE	1542	MAX16086AUS18E/V +T	150°C	1000	HRS	60	0
STORAGE LIFE	1546	MAX2640EUT+	150°C	1000	HRS	80	0
STORAGE LIFE	1606	MAX6394US480D3/V +T	150°C	1000	HRS	80	0
STORAGE LIFE	1606	MAX6394US480D3/V +T	150°C	1000	HRS	80	0
STORAGE LIFE	1606	MAX6394US480D3/V +T	150°C	1000	HRS	80	0

STORAGE LIFE	1607	MAX6070AAUT50/V+ 150°C	500	HRS	79	0
STORAGE LIFE	1607	MAX6070AAUT50/V+ 150°C	1000	HRS	20	0
STORAGE LIFE	1607	MAX6070AAUT50/V+ 150°C	500	HRS	80	0
STORAGE LIFE	1607	MAX6070AAUT50/V+ 150°C	1000	HRS	20	0
STORAGE LIFE	1607	MAX6070AAUT50/V+ 150°C	500	HRS	80	0
STORAGE LIFE	1616	MAX6425UK23+ 150°C	1000	HRS	80	0
STORAGE LIFE	1616	MAX6425UK23+ 150°C	500	HRS	41	0
STORAGE LIFE	1616	MAX6425UK23+ 150°C	1000	HRS	79	0
STORAGE LIFE	1616	LM4040AEM3-2.5+T 150°C	500	HRS	78	0
STORAGE LIFE	1616	LM4040AEM3-2.5+T 150°C	500	HRS	80	0
STORAGE LIFE	1617	MAX9017AEKA/V+ 150°C	1000	HRS	90	0
STORAGE LIFE	1617	MAX9017AEKA/V+ 150°C	1000	HRS	87	0
STORAGE LIFE	1617	MAX9017AEKA/V+ 150°C	1000	HRS	80	0
STORAGE LIFE	1621	MAX6896AAZT/V+ 150°C	1000	HRS	77	0
STORAGE LIFE	1621	MAX6896AAZT/V+ 150°C	1000	HRS	78	0
STORAGE LIFE	1621	MAX6896AAZT/V+ 150°C	1000	HRS	79	0
STORAGE LIFE	1622	MAX6414UK31/V+ 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	1037	MAX2607EUT+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX16053AUT+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1531	MAX44251AKA+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1542	MAX16086AUS18E/V+T	-65C TO +150C (Condition C)	500	CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1546	MAX2640EUT+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1607	MAX6070AAUT50/V+	-65C TO +150C (Condition C)	500	CYS	114	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1607	MAX6070AAUT50/V+	-65C TO +150C (Condition C)	500	CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1607	MAX6070AAUT50/V+	-65C TO +150C (Condition C)	500	CYS	114	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1616	MAX6425UK23+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1616	MAX6425UK23+	-65C TO +150C (Condition C)	500	CYS	71	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1616	MAX6425UK23+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1616	LM4040AEM3-2.5+T	-65C TO +150C (Condition C)	1000	CYS	149	0

TEMP CYCLE, 5' RAMP, 10' DWELL	1616	LM4040AEM3-2.5+T	-65C TO +150C (Condition C)	1000	CYS	148	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1616	LM4040AEM3-2.5+T	-65C TO +150C (Condition C)	500	CYS	149	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1622	MAX6414UK31/V+	-65C TO +150C (Condition C)	1000	CYS	120	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1648	MAX16135HRB/V+T	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1648	MAX16135HRB/V+T	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1648	MAX16135HRB/V+T	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1651	MAX9017AEKA/V+T	-65C TO +150C (Condition C)	500	CYS	120	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1651	MAX9017AEKA/V+T	-65C TO +150C (Condition C)	500	CYS	120	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1651	MAX9017AEKA/V+T	-65C TO +150C (Condition C)	500	CYS	120	0
Total:							0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1229	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1249	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1328	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1328	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1426	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1544	MAX16053AUT+	130C, 85% R.H.	100 HRS	79	0	
BIASED MOISTURE	1544	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1607	MAX6070AAUT50/V+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1607	MAX6070AAUT50/V+	130C, 85% R.H.	100 HRS	79	0	
BIASED MOISTURE	1607	MAX6070AAUT50/V+	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	1229	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1328	MAX156053AUT+	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1426	MAX16053AUT+	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1531	MAX44251AKA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1607	MAX6070AAUT50/V+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1607	MAX6070AAUT50/V+	130C, 85% R.H.	96 HRS	78	0	
MOISTURE SOAK	1607	MAX6070AAUT50/V+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1616	MAX6425UK23+	130C, 85% R.H.	96 HRS	79	0	
MOISTURE SOAK	1616	MAX6425UK23+	130C, 85% R.H.	96 HRS	33	0	

MOISTURE SOAK	1616	MAX6425UK23+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1616	LM4040AEM3-2.5+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1616	LM4040AEM3-2.5+	130C, 85% R.H.	96	HRS	19	0
MOISTURE SOAK	1616	LM4040AEM3-2.5+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1651	MAX9017AEKA/V+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1651	MAX9017AEKA/V+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1651	MAX9017AEKA/V+T	130C, 85% R.H.	96	HRS	80	0
Total:							0

Assembly Information:

Package Type: TSOT (Pb-Free)

Date Code Range: 1642 to 1642

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1642	MAX6896AAZT/V+	-65C TO +150C (Condition C)	1000	CYS	84	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1642	MAX6896AAZT/V+	-65C TO +150C (Condition C)	1000	CYS	85	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1642	MAX6896AAZT/V+	-65C TO +150C (Condition C)	1000	CYS	85	0
Total:							0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1642	MAX6896AAZT/V+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1642	MAX6896AAZT/V+	130C, 85% R.H.	96	HRS	79	0
MOISTURE SOAK	1642	MAX6896AAZT/V+	130C, 85% R.H.	96	HRS	80	0
Total:							0

FAILURE RATE: MTTF (YRS): 313830 FITS: 0.4