

4/16/2014



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	8	uSOP (Pb-Free)	ATP	10 uSOP (Pb-Free)
ATP	10	uSOP-EP (Pb-Free)	UTL	10 uMax (Pb-Free)
UTL	8	uSOP (Pb-Free)	UTL	10 uSOP (Pb-Free)
UTL	8	uSOP-EP (Pb-Free)		

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 42154 FITS: 2.7

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

Assembly Information:

Package Type: uMax (Pb-Free)
Date Code Range: 1340 to 1345

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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	1345	MAX17552AUB+	135°C	192 HRS	75	0	
Total:						1	

Assembly Information:

Package Type: uSOP (Pb-Free)
Date Code Range: 1211 to 1352

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1224	MAX16916GUB/V+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1224	MAX16916GUB/V+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1231	MAX16916GUB/V+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1236	MAX31180	125C, 3.6 VOLTS	1000 HRS	80	0	
HIGH TEMP OP LIFE	1248	MAX78700	125C, 3.6 VOLTS	192 HRS	80	0	
HIGH TEMP OP LIFE	1249	MAX5704AUB+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1250	MAX78700	125C, 3.6 VOLTS	192 HRS	80	0	
HIGH TEMP OP LIFE	1308	MAX1745AUB+	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1308	MAX1745AUB+	135°C	1000 HRS	80	0	

HIGH TEMP OP LIFE	1308	MAX1745AUB+	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1317	MAX16916GUB/V+	135°C	500	HRS	80	0
HIGH TEMP OP LIFE	1321	MAX14681EUB+	135°C	192	HRS	80	0
HIGH TEMP OP LIFE	1321	MAX14681EUB+	135°C	192	HRS	80	1
HIGH TEMP OP LIFE	1330	MAX44285TAUA+	135°C	308	HRS	80	0
HIGH TEMP OP LIFE	1330	MAX44285TAUA+	135°C	192	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
Total:							1

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1224	MAX16916GUB/V+	150°C	1000 HRS	80	0	
STORAGE LIFE	1230	MAX16916GUB/V+	150°C	1000 HRS	80	0	
STORAGE LIFE	1231	MAX16916GUB/V+	150°C	500 HRS	45	0	
STORAGE LIFE	1308	MAX1745AUB+	150°C	1000 HRS	80	0	
STORAGE LIFE	1308	MAX1745AUB+	150°C	1000 HRS	80	0	
STORAGE LIFE	1308	MAX1745AUB+	150°C	1000 HRS	80	0	
STORAGE LIFE	1334	MAX5704AUB+	150°C	1000 HRS	80	0	
STORAGE LIFE	1334	MAX5704AUB+	150°C	500 HRS	80	0	
Total:							0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1211	MAX16916GUB/V+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1224	MAX16916GUB/V+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1231	MAX16916GUB/V+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1308	MAX1745AUB+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1308	MAX1745AUB+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX44285TAUA+	-65C TO 150C	1000 CYS	76	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX44285TAUA+	-65C TO 150C	1000 CYS	64	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1334	MAX5704AUB+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX669EUB/V+	-65C TO 150C	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX669EUB/V+	-65C TO 150C	500 CYS	80	0	
Total:							0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1211	MAX16916GUB/V+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1231	MAX16916GUB/V+	130C, 85% R.H.	100 HRS	80	0	
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	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	
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1230	MAX16916GUB/V+	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1231	MAX16916GUB/V+	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1308	MAX1745AUB+	130C, 85% R.H.	1000 HRS	80	0	
MOISTURE SOAK	1308	MAX1745AUB+	130C, 85% R.H.	1000 HRS	80	0	
MOISTURE SOAK	1308	MAX1745AUB+	130C, 85% R.H.	1000 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	

Assembly Information:

Package Type: uSOP-EP (Pb-Free)

Date Code Range: 1230 to 1321

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1230	MAX44247AUA+	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1233	MAX44247AUA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1321	MAX16956AUBA/V+	135°C	192 HRS	79	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1230	MAX44247AUA+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1230	MAX44247AUA+	-65C TO 150C	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1233	MAX44247AUA+	-65C TO 150C	1000 CYS	78	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1233	MAX44247AUA+	-65C TO 150C	500 CYS	80	0	

TEMP CYCLE, 5' RAMP, 10' DWELL	1233	MAX44247AUA+	-65C TO 150C	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1233	MAX44247AUA+	-65C TO 150C	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1233	MAX44247AUA+	-65C TO 150C	1000 CYS	80	0
Total:						0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1303	MAX11102AUB+	130C, 85% R.H.	100 HRS	80	0	
Total:							0

FAILURE RATE: MTTF (YRS): 42154 FITS: 2.7