

4/17/2013



RELIABILITY MONITOR REPORT
FOR

SC70 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		
Carsem-M	3	SC70 (Pb-Free)	Carsem-M	4 SC70 (Pb-Free)
Carsem-M	5	SC70 (Pb-Free)	HANA-AYT	3 SC70 (Pb-Free)
HANA-AYT	5	SC70 (Pb-Free)	UTL Thailand	5 SC70 (Pb-Free)
UTL Thailand	6	SC70 (Pb-Free)	UTL Thailand	8 SC70 (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 37166 FITS: 3.1

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 4/1/2012 and 3/31/2013.

Assembly Information:

Package Type: SC70 (Pb-Free)

Date Code Range: 1005 to 1301

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1042	MAX6423XS29+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1140	MAX9914EXK+	135°C	192 HRS	32	0	
HIGH TEMP OP LIFE	1140	MAX9914EXK+	135°C	192 HRS	48	0	
HIGH TEMP OP LIFE	1148	MAX6421XS48+T	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1201	MAX6422XS26+T	135°C	1000 HRS	78	0	
HIGH TEMP OP LIFE	1219	MAX44263AXA+	135°C	288 HRS	32	0	
HIGH TEMP OP LIFE	1219	MAX44263AXA+	135°C	192 HRS	48	0	
Total:						0	

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	1211	MAX6834HXRD2+	260C +/-5C	9001 PASS	399	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1005	MAX9636AXT+	150°C	1000 HRS	50	0	
STORAGE LIFE	1033	MAX6423XS29+	150°C	1000 HRS	50	0	
STORAGE LIFE	1148	MAX6421XS48+T	150°C	1000 HRS	50	0	
STORAGE LIFE	1201	MAX6422XS26+T	150°C	1000 HRS	50	0	
STORAGE LIFE	1202	MAX803LEXR+	150°C	1000 HRS	50	0	

STORAGE LIFE	1211	MAX6834HXRD2+	150°C	1000	HRS	80	0
STORAGE LIFE	1211	MAX6834HXRD2+	150°C	1000	HRS	80	0
STORAGE LIFE	1211	MAX6834HXRD2+	150°C	1000	HRS	80	0
STORAGE LIFE	1223	MAX803TEXR+	150°C	1000	HRS	50	0
STORAGE LIFE	1229	MAX6834HXRD2+T	150°C	1000	HRS	80	0
STORAGE LIFE	1229	MAX6834HXRD2+T	150°C	1000	HRS	80	0
STORAGE LIFE	1229	MAX6834HXRD2+T	150°C	1000	HRS	80	0
STORAGE LIFE	1231	MXD1816XR29+	150°C	500	HRS	50	0
STORAGE LIFE	1235	MAX16083XR322B/V +	150°C	1000	HRS	80	0
STORAGE LIFE	1301	MAX9636AXT/V+	150°C	1000	HRS	50	0
						Total:	0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1005	MAX9636AXT+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1005	MAX9636AXT/V+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1202	MAX4230AXK+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1211	MAX6834HXRD2+	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1211	MAX6834HXRD2+	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1211	MAX6834HXRD2+	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1223	MAX803TEXR+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX6834HXRD2+T	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX6834HXRD2+T	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1229	MAX6834HXRD2+T	-65C TO 150C	1000	CYS	79	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1235	MAX6673AXK+	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1235	MAX16083XR322B/V +	-65C TO 150C	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1235	MAX16083XR31L+T	-65C TO 150C	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1239	MAX6834HXDD2+T	-65C TO 150C	500	CYS	478	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1239	MAX6834HXRD2+T	-65C TO 150C	1000	CYS	478	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1301	MAX9636AXT/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	1005	MAX9636AXT+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1211	MAX6834HXRD2+	130C, 85% R.H.	100 HRS	45	0	
BIASED MOISTURE	1223	MAX803TEXR+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1229	MAX6834HXRD2+T	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1229	MAX6834HXRD2+T	130C, 85% R.H.	100 HRS	77	0	
BIASED MOISTURE	1229	MAX6834HXRD2+T	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1235	MAX6673AXK+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1235	MAX16083XR31L+T	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1301	MAX9636AXT/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	1005	MAX9636AXT/V+	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1005	MAX9636AXT/V+	130C, 85% R.H.	100 HRS	77	0	
MOISTURE SOAK	1235	MAX6673AXK+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1235	MAX16083XR322B/V +	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1235	MAX16083XR31L+T	130C, 85% R.H.	100 HRS	80	0	
MOISTURE SOAK	1301	MAX9636AXT/V+	130C, 85% R.H.	100 HRS	80	0	
				Total:		0	

FAILURE RATE: MTTF (YRS): 37166 FITS: 3.1