



4/20/2008

RELIABILITY MONITOR REPORT  
FOR

**SOIC Package**

**MAXIM Integrated Products**

120 San Gabriel Dr.  
Sunnyvale, CA 94086

This Report was prepared by  
Maxim 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 (Amkor, PI)	24	SOIC	ATP (Amkor, PI)	8 SOIC (Pb-Free)
ATP (Amkor, PI)	28	SOIC (Pb-Free)	Carsem	8 SOIC (Pb-Free)
Carsem	16	SOIC (Pb-Free)	CIRTEK	20 SOIC Welded Crystal (RoHS)
Hana AYUTHAYA	8	SOIC (Pb-Free)	OSEP	16 SOIC (Pb-Free)
OSEP	28	SOIC (Pb-Free)	Unisem	8 SOIC
Unisem	8	SOIC (Pb-Free)	Unisem	16 SOIC (Pb-Free)
UTL (NSEB) UTAC	8	SOIC (Pb-Free)		

The calculated failure rate for this assembly is:

**FAILURE RATE: MTTF (YRS): 208922 FITS: 0.5**

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 4/1/2007 and 3/31/2008.

**Assembly Information:**

Package Type: SOIC  
 Flammability: UL 94-V0  
 Date Code Range: 0646 to 0652

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0646	DS75	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0652	DS17885	125C, 5.5 VOLTS	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

**Assembly Information:**

Package Type: SOIC (Pb-Free)  
 Flammability: UL 94-V0  
 Date Code Range: 0710 to 0807

**DATA RETENTION**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0730	DS3991	150C	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0710	DS1722	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0713	DS2413	125C, 5.25 VOLTS	1000 HRS	45	0	
			125C, 5.25 VOLTS	1000 HRS	45	0	

HIGH TEMP OP LIFE	0713	DS3994	125C, 5.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0713	DS75LX	125C, 3.7 VOLTS	1000 HRS	45	0
HIGH TEMP OP LIFE	0714	DS1682	125C, 5.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0714	DS75	125C, 5.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0716	DS1283	125C, 5.0 VOLTS	1000 HRS	45	0
VISUAL INSPECTION			WHISKERS < 50uM		45	0
HIGH TEMP OP LIFE	0719	DS1803	125C, 5.25 VOLTS	1000 HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		77	0
			WHISKERS < 50uM		77	0
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0719	DS1803	125C, 5.25 VOLTS	1000 HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		75	0
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		75	0
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		77	0
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0719	DS1803	125C, 5.25 VOLTS	1000 HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		76	0
			WHISKERS < 50uM		76	0
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0722	DS1311	125C, 5.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0730	DS3991	125C, 5.5V (PSA) & 3.0V (PSB)	1000 HRS	45	0
HIGH TEMP OP LIFE	0742	DS2433	125C, 6.0 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0744	DS8113	125C, 6.0 VOLTS	1000 HRS	45	0
HIGH TEMP OP LIFE	0746	DS7505	125C, 3.7 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0805	DS2433	125C, 6.0 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0807	DS2433	125C, 6.0 VOLTS	1000 HRS	77	0
<b>Total:</b>						<b>0</b>

---

### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0714	DS75	150C	1000 HRS	77	0	
VISUAL INSPECTION	0716	DS1283	WHISKERS < 50uM		77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	
			WHISKERS < 50uM		77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
			150C	1000 HRS	77	0	
STORAGE LIFE	0719	DS1803	150C	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	

STORAGE LIFE			150C	1000 HRS	77	0
			150C	1000 HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		77	0
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		76	0
			WHISKERS < 50uM		76	0
STORAGE LIFE			150C	1000 HRS	77	0
			150C	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	0714	DS75	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0716	DS1283	-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0719	DS1803	-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0719	DS1803	-55C TO 125C	1000 CYS	77	0	
			-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
			WHISKERS < 50uM		77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0	
			-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
<b>Total:</b>					<b>0</b>	<b>0</b>	

### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST	0714	DS75	130C, 85%R.H.,5.5V	96 HRS	77	0	
HAST	0716	DS1283	130C, 85%R.H.,3.5V	96 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		42	0	
			WHISKERS < 50uM		42	0	
BIASED MOISTURE			85/85, 5.5 VOLTS	1000 HRS	42	0	
			85/85, 5.5 VOLTS	1000 HRS	42	0	
BIASED MOISTURE	0719	DS1803	85/85, 5.5 VOLTS	1000 HRS	43	0	
			85/85, 5.5 VOLTS	1000 HRS	43	0	
VISUAL INSPECTION			WHISKERS < 50uM		43	0	
			WHISKERS < 50uM		43	0	

VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		43	0
			WHISKERS < 50uM		43	0
BIASED MOISTURE			85/85, 5.5 VOLTS	1000 HRS	43	0
			85/85, 5.5 VOLTS	1000 HRS	43	0
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		41	0
BIASED MOISTURE			85/85, 5.5 VOLTS	1000 HRS	42	0
			85/85, 5.5 VOLTS	1000 HRS	42	0
VISUAL INSPECTION			WHISKERS < 50uM		41	0
<b>Total:</b>					<b>0</b>	<b>0</b>

---

**W/E ENDURANCE AND DATA RET'N**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
WRITE CYCLE STRESS (KCYS)	0713	DS3994	70 C, 5.5 VOLTS	30 KCYS	77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
STORAGE LIFE	0714	DS1682	150C	1000 HRS	77	0	
WRITE CYCLE STRESS (KCYS)			85 C, 5.5 VOLTS	30 KCYS	77	0	
STORAGE LIFE	0742	DS2433	150C	1000 HRS	150	0	
WRITE CYCLE STRESS (KCYS)			25 C, 5.0 VOLTS	50 KCYS	150	0	
WRITE CYCLE STRESS (KCYS)	0746	DS7505	25 C, 3.7 VOLTS	80 KCYS	77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
STORAGE LIFE	0746	DS7505	150C	1000 HRS	77	0	
WRITE CYCLE STRESS (KCYS)			85 C, 3.7 VOLTS	20 KCYS	77	0	
WRITE CYCLE STRESS (KCYS)	0805	DS2433	25 C, 5.0 VOLTS	50 KCYS	231	0	
STORAGE LIFE			150C	1000 HRS	231	0	
STORAGE LIFE	0807	DS2433	150C	1000 HRS	231	0	
WRITE CYCLE STRESS (KCYS)			25 C, 5.0 VOLTS	50 KCYS	231	0	
<b>Total:</b>					<b>0</b>	<b>0</b>	

---

**Assembly Information:**

Package Type: SOIC w/Crystal  
 Flammability: UL 94-V0  
 Date Code Range: 0720 to 0720

---

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0720	DS3232	125C, 5.5 VOLTS	1000 HRS	45	0	
<b>Total:</b>					<b>0</b>	<b>0</b>	

**FAILURE RATE: MTTF (YRS): 208922 FITS: 0.5**