

10/23/2014



**RELIABILITY MONITOR REPORT
FOR**

DFN 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	TDFN (Pb-Free)	ASE Chung-Li	10	TDFN (Pb-Free)
ASE Chung-Li	6	uDFN (Pb-Free)	ASE Chung-Li	8	uDFN (Pb-Free)
Hana AYUTHAYA	6	OTDFN (Pb-Free)	UTL (NSEB) UTAC	6	TDFN (Pb-Free)
UTL (NSEB) UTAC	8	TDFN (Pb-Free)	UTL (NSEB) UTAC	10	TDFN (Pb-Free)
UTL (NSEB) UTAC	6	TDFN-HYB (Pb-Free)	UTL (NSEB) UTAC	6	uDFN (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 190259 FITS: 0.6

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 10/1/2013 and 9/30/2014.

Assembly Information:

Package Type: OTDFN (Pb-Free)

Date Code Range: 1246 to 1423

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1419	MAX44009EDT+	135°C	500 HRS	78	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1314	MAX44005EDT+	150°C	1000 HRS	196	0	
STORAGE LIFE	1419	MAX44009EDT+	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	1246	MAX44009EDT+T	-65C TO +150C (Condition C)	1000 CYS	91	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1246	MAX44009EDT+T	-65C TO +150C (Condition C)	900 CYS	91	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1246	MAX44009EDT+T	-65C TO +150C (Condition C)	850 CYS	84	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1318	MAX44009EDT+T	-65C TO +150C (Condition C)	1000 CYS	994	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1319	MAX44009EDT+T	-65C TO +150C (Condition C)	1000 CYS	993	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1402	MAX44009EDT+T	-65C TO +150C (Condition C)	1000 CYS	200	0	

TEMP CYCLE, 5' RAMP, 10' DWELL	1402	MAX44009EDT+T	-65C TO +150C (Condition C)	1000	CYS	200	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1419	MAX44009EDT+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1423	MAX44009EDT+T	-65C TO +150C (Condition C)	100	CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1423	MAX44009EDT+T	-65C TO +150C (Condition C)	100	CYS	200	1
Total:							1

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1419	MAX44009EDT+	85 C/85% R.H.	500	HRS	80	1
Total:							1

Assembly Information:

Package Type: TDFN (Pb-Free)

Date Code Range: 1204 to N/A

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1204	MAX17510ATB/V+	135°C	500	HRS	80	0
HIGH TEMP OP LIFE	1240	MAX17510ATB/V+	135°C	500	HRS	79	0
HIGH TEMP OP LIFE	1330	MAX16840ATB+	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1331	MAX14562ETA+	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1337	MAX16840ATB+	135°C	1000	HRS	79	0
HIGH TEMP OP LIFE	1343	MAX8902AATA+	135°C	500	HRS	80	0
HIGH TEMP OP LIFE	1345	MAX17552AUB+	135°C	192	HRS	75	0
HIGH TEMP OP LIFE	1345	MAX17552AUB+	135°C	192	HRS	75	0
HIGH TEMP OP LIFE	1350	MAX17048	125C, 5.0 VOLTS	1024	HRS	80	0
HIGH TEMP OP LIFE	1352	MAX8902AATA/V+	135°C	500	HRS	77	0
HIGH TEMP OP LIFE	1352	MAX8902AATA/V+	135°C	500	HRS	80	0
HIGH TEMP OP LIFE	1402	MAX5394L	135C, 5.5V (PSA)	1000	HRS	80	0
HIGH TEMP OP LIFE	1402	MAX5394L	135C, 5.5V (PSA)	1000	HRS	80	0
HIGH TEMP OP LIFE	1403	MAX17510ATB/V+	135°C	500	HRS	80	0
HIGH TEMP OP LIFE	1403	MAX17510ATB/V+	135°C	500	HRS	80	0
Total:							0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1204	MAX17510ATB/V+	150°C	1000	HRS	50	0
STORAGE LIFE	1240	MAX17510ATB/V+	150°C	500	HRS	80	0
STORAGE LIFE	1330	MAX16840ATB+	150°C	1000	HRS	80	0
STORAGE LIFE	1331	MAX14562ETA+	150°C	1000	HRS	80	0

STORAGE LIFE	1337	MAX16840ATB+	150°C	1000	HRS	80	0
STORAGE LIFE	1342	MAX8902AATA+	150°C	1000	HRS	80	0
STORAGE LIFE	1350	MAX17048	150°C	1000	HRS	80	0
STORAGE LIFE	1352	MAX8902AATA+	150°C	1000	HRS	80	0
STORAGE LIFE	1422	MAX15006BATT+	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	1330	MAX16840ATB+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1331	MAX14562ETA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1337	MAX16840ATB+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1343	MAX8902AATA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1351	MAX8902AATA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1351	MAX8902AATA+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX8902AATA/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX8902AATA/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX8902AATA/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX17510ATB/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX17510ATB/V+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1422	MAX15006BATT+	-65C TO +150C (Condition C)	500	CYS	80	0
Total:							0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1204	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	33	0
BIASED MOISTURE	1240	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	33	0
BIASED MOISTURE	1330	MAX16840ATB+	130C, 85% R.H.	100	HRS	38	0
BIASED MOISTURE	1331	MAX14562ETA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1343	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1351	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1352	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1352	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1352	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
BIASED MOISTURE	1403	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	33	0

BIASED MOISTURE	1403	MAX17510ATB/B+	130C, 85% R.H.	100	HRS	33	0
BIASED MOISTURE	1403	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	33	0
BIASED MOISTURE	1403	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	33	0
Total:							0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1204	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1240	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1331	MAX14562ETA+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1343	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1351	MAX8902AATA+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1351	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1352	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1352	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1352	MAX8902AATA+	130C, 85% R.H.	100	HRS	80	0
MOISTURE SOAK	1403	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	80	1
MOISTURE SOAK	1403	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1403	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1403	MAX17510ATB/V+	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	N/A	MAX5969BETB+T	85 C/85% R.H.	1000	HRS	44	1
MOISTURE SOAK	N/A	MAX5969BETB+T	85 C/85% R.H.	1000	HRS	45	0
MOISTURE SOAK	N/A	MAX5969BETB+T	85 C/85% R.H.	1000	HRS	45	0
Total:							2

Assembly Information:

Package Type: TDFN-HYB (Pb-Free)

Date Code Range: 1342 to 1342

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1342	DS28E01	125C, 5.25 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1342	DS28E01	125C, 5.25 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1342	DS28E01	125C, 5.25 VOLTS	1000	HRS	80	0
Total:							0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1342	DS28E01	150°C	1000	HRS	77	0
STORAGE LIFE	1342	DS28E01	150°C	1000	HRS	77	0
STORAGE LIFE	1342	DS28E01	150°C	1000	HRS	77	0

Total: 0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1342	DS28E01	-55C TO +125C (Condition B)	1000	CYS	82	0
BOND PULL STRENGTH	1342	DS28E01	>=3 GMS	500	WIRES	82	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1342	DS28E01	-55C TO +125C (Condition B)	1000	CYS	82	0
BOND PULL STRENGTH	1342	DS28E01	>=3 GMS	500	WIRES	82	0
BOND PULL STRENGTH	1342	DS28E01	>=3 GMS	500	WIRES	82	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1342	DS28E01	-55C TO +125C (Condition B)	1000	CYS	82	0
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST	1342	DS28E01	130C, 85%R.H., 5.25V	100	HRS	45	0
HAST	1342	DS28E01	130C, 85%R.H., 5.25V	100	HRS	45	0
HAST	1342	DS28E01	130C, 85%R.H., 5.25V	100	HRS	45	0
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST, NO BIAS	1342	DS28E01	130C, 85% R.H.	300	HRS	77	0
HAST, NO BIAS	1342	DS28E01	130C, 85% R.H.	300	HRS	77	0
HAST, NO BIAS	1342	DS28E01	130C, 85% R.H.	300	HRS	77	0
Total:						0	

Assembly Information:

Package Type: uDFN (Pb-Free)

Date Code Range: 1404 to 1419

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1404	MAX2659ELT+T	135°C	500	HRS	79	0
HIGH TEMP OP LIFE	1416	MAX2659ELT+T	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1417	MAX5128ELA+T	135°C	192	HRS	48	0
HIGH TEMP OP LIFE	1419	MAX2659ELT+T	135°C	192	HRS	80	0
HIGH TEMP OP LIFE	1419	MAX2659ELT+T	135°C	500	HRS	80	0
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1417	MAX5128ELA+T	150°C	500	HRS	80	0
STORAGE LIFE	1419	MAX2659ELT+T	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	1417	MAX5128ELA+T	-65C TO +150C (Condition C)	1000	CYS	78	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1419	MAX2659ELT+T	-65C TO +150C (Condition C)	1000	CYS	80	0
						Total:	0

FAILURE RATE: MTTF (YRS):190259 FITS: 0.6