

4/23/2015



RELIABILITY MONITOR REPORT  
FOR

**WLP 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		
DALLAS-MAXFIL	4	UTWLP (Pb-Free)	DALLAS-MAXFIL	9 UTWLP (Pb-Free)
DALLAS-MAXFIL	9	WLP (Pb-Free)	TERAPROBE	16 WLP-HC (Pb-Free)

The calculated failure rate for this assembly is:

**FAILURE RATE: MTTF (YRS): 5953 FITS: 19.2**

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 4/1/2014 and 3/31/2015.

**Assembly Information:**

Package Type: UTWLP (Pb-Free)  
Date Code Range: 1426 to N/A

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1426	MAX44286HAZS+T	135°C	192 HRS	80	0	
<b>Total:</b>						<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE		MAX4163EZL+T	150°C	1000 HRS	77	0	
STORAGE LIFE		MAX4163EZL+T	150°C	500 HRS	77	0	
STORAGE LIFE		MAX4163EZL+T	150°C	1000 HRS	77	0	
STORAGE LIFE		MAX4163EZL+T	150°C	500 HRS	77	0	
STORAGE LIFE	N/A	MAX4163EZL+T	150°C	1000 HRS	77	0	
STORAGE LIFE	N/A	MAX4163EZL+T	150°C	500 HRS	77	0	
STORAGE LIFE	N/A	MAX4163EZL+T	150°C	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	1000 CYS	77	0	
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	500 CYS	77	0	
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	1000 CYS	77	0	
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	500 CYS	77	0	
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4163EZL+T	-40C TO +125C (Condition G)	1000 CYS	77	0	

TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4163EZL+T	-40C TO +125C (Condtion G)	1000	CYS	77	0
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4163EZL+T	-40C TO +125C (Condtion G)	500	CYS	77	0
<b>Total:</b>						<b>0</b>	<b>0</b>

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK		MAX4163EZL+T	130C, 85% R.H.	100	HRS	77	0
MOISTURE SOAK		MAX4163EZL+T	85 C/85% R.H.	500	HRS	77	0
MOISTURE SOAK		MAX4163EZL+T	130C, 85% R.H.	100	HRS	77	0
MOISTURE SOAK		MAX4163EZL+T	85 C/85% R.H.	500	HRS	76	0
MOISTURE SOAK	N/A	MAX4163EZL+T	130C, 85% R.H.	100	HRS	77	0
<b>Total:</b>						<b>0</b>	<b>0</b>

**Assembly Information:**

Package Type: WLP (Pb-Free)  
Date Code Range: 1321 to 1321

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 15' RAMP, 15' DWELL	1321	MAX98357AETE+	-40C TO +125C (Condtion G)	850	CYS	77	0
<b>Total:</b>						<b>0</b>	<b>0</b>

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1321	MAX98357AETE+	85 C/85% R.H.	1000	HRS	80	0
MOISTURE SOAK	1321	MAX98357AETE+	130C, 85% R.H.	1000	HRS	80	0
<b>Total:</b>						<b>0</b>	<b>0</b>

**Assembly Information:**

Package Type: WLP-HC (Pb-Free)  
Date Code Range: 1408 to 1408

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1408	MAX15096GWE+	135°C	192	HRS	80	0
<b>Total:</b>						<b>0</b>	<b>0</b>

**FAILURE RATE: MTTF (YRS): 5953 FITS: 19.2**