

7/10/2017



RELIABILITY MONITOR REPORT  
FOR

**SOIC 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	SOIC (Pb-Free)	ASE Chung-Li	9 SOIC (Pb-Free)
ASE Chung-Li	16	SOIC (Pb-Free)	ASE Chung-Li	28 SOIC (Pb-Free)
ASE Kaoshiung	14	SOIC (Pb-Free)	ASE Kunshan	8 SOIC (Pb-Free)
ASE Kunshan	14	SOIC (Pb-Free)	ASE Kunshan	16 SOIC (Pb-Free)
ASE Taiwan	14	SOIC (Pb-Free)	ATP (Amkor, PI)	8 SOIC (Pb-Free)
ATP (Amkor, PI)	14	SOIC (Pb-Free)	ATP (Amkor, PI)	16 SOIC (Pb-Free)
ATP (Amkor, PI)	18	SOIC (Pb-Free)	ATP (Amkor, PI)	24 SOIC (Pb-Free)
ATP (Amkor, PI)	28	SOIC (Pb-Free)	Carsem-M	8 SOIC (Pb-Free)
CARSEM-M	14	SOIC (Pb-Free)	Carsem-M	16 SOIC (Pb-Free)
UTL (NSEB) UTAC	8	SOIC (Pb-Free)	UTL (NSEB) UTAC	14 SOIC (Pb-Free)

The calculated failure rate for this assembly is:

**FAILURE RATE: MTTF (YRS): 474145 FITS: 0.2**

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 4/1/2017 and 6/30/2017.

**Assembly Information:**

Package Type: SOIC (Pb-Free)  
Date Code Range: 1540 to 1709

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1612	MAX9643TASA+	135°C	1000 HRS	77	0	
HIGH TEMP OP LIFE	1612	MAX9643TASA+	135°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1612	MAX9643TASA+	135°C	1000 HRS	77	0	
HIGH TEMP OP LIFE	1614	MAX14936BAWE+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1614	MAX14936BAWE+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1614	MAX14936BAWE+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1617	MAX527DCWG+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1620	MAX14776EASA+	135°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1621	MAX253ESA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1623	MAX603ESA+	135°C	500 HRS	80	0	
HIGH TEMP OP LIFE	1623	DG406EWI+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1624	MAX913ESA+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1625	MAX995ESD+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1627	MAX13089EESD+	135°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1628	MAX6325CSA+	135°C	1000 HRS	80	0	

HIGH TEMP OP LIFE	1628	MAX526CCWG+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1630	MAX3082EESA+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1636	MAX12931BASA+	135°C	192 HRS	80	0
HIGH TEMP OP LIFE	1636	DG201ACSE+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1637	MAX691EWE+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1637	MAX14883EASA+	135°C	192 HRS	80	0
HIGH TEMP OP LIFE	1638	MAX15013AASA+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1638	MAX222CWN+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1639	MAX913ESA+	135°C	1000 HRS	79	0
HIGH TEMP OP LIFE	1639	MAX913ESA+	135°C	1000 HRS	79	0
HIGH TEMP OP LIFE	1639	MAX913ESA+	135°C	500 HRS	80	0
HIGH TEMP OP LIFE	1639	MAX5717AGSD+	135°C	192 HRS	80	0
HIGH TEMP OP LIFE	1640	MAX6250BESA+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1641	MAX485CSA+	135°C	1000 HRS	61	0
HIGH TEMP OP LIFE	1644	MAX12930BASA+	135°C	192 HRS	80	0
HIGH TEMP OP LIFE	1645	MAX494ESD+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1645	MAX494ESD+	135°C	1000 HRS	79	0
HIGH TEMP OP LIFE	1645	MAX494ESD+	135°C	1000 HRS	79	0
HIGH TEMP OP LIFE	1703	MAX13089EESD+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1705	MAX667ESA+	135°C	1000 HRS	80	0
HIGH TEMP OP LIFE	1709	MAX253ESA+	135°C	1000 HRS	80	0
<b>Total:</b>					<b>0</b>	<b>0</b>

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#### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1540	MAX4666ESE+	150°C	1000 HRS	80	0	
STORAGE LIFE	1540	MAX4666ESE+	150°C	1000 HRS	80	0	
STORAGE LIFE	1603	MAX6921AWI/V+	150°C	1000 HRS	60	0	
STORAGE LIFE	1612	MAX9643TASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1612	MAX9643TASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1612	MAX9643TASA+	150°C	1000 HRS	80	0	
STORAGE LIFE	1614	MAX14936BAWE+	150°C	1000 HRS	80	0	
STORAGE LIFE	1614	MAX14936BAWE+	150°C	1000 HRS	80	0	
STORAGE LIFE	1614	MAX14936BAWE+	150°C	1000 HRS	80	0	
STORAGE LIFE	1614	MAX6921AWI+	150°C	1000 HRS	80	0	
STORAGE LIFE	1615	MAX1709ESE+	150°C	1000 HRS	80	0	
STORAGE LIFE	1617	MAX527DCWG+	150°C	1000 HRS	80	0	
STORAGE LIFE	1621	MAX253ESA+	150°C	1000 HRS	80	0	

STORAGE LIFE	1623	DG406EWI+	150°C	1000	HRS	80	0
STORAGE LIFE	1624	MAX913ESA+	150°C	1000	HRS	80	0
STORAGE LIFE	1627	MAX13089EESD+	150°C	1000	HRS	80	0
STORAGE LIFE	1627	MAX237EWG+	150°C	1000	HRS	80	0
STORAGE LIFE	1628	MAX6325CSA+	150°C	1000	HRS	80	0
STORAGE LIFE	1628	MAX526CCWG+	150°C	1000	HRS	80	0
STORAGE LIFE	1630	MAX3082EESA+	150°C	1000	HRS	80	0
STORAGE LIFE	1631	MAX253ESA+	150°C	1000	HRS	80	0
STORAGE LIFE	1631	MAX6126BASA25+	150°C	1000	HRS	80	0
STORAGE LIFE	1636	DG201ACSE+	150°C	1000	HRS	80	0
STORAGE LIFE	1637	MAX691EWE+	150°C	1000	HRS	80	0
STORAGE LIFE	1638	MAX15013AASA+	150°C	1000	HRS	80	0
STORAGE LIFE	1638	MAX222CWN+	150°C	1000	HRS	80	0
STORAGE LIFE	1639	MAX913ESA+	150°C	500	HRS	90	0
STORAGE LIFE	1639	MAX913ESA+	150°C	1000	HRS	90	0
STORAGE LIFE	1639	MAX913ESA+	150°C	500	HRS	90	0
STORAGE LIFE	1640	MAX6250BESA+	150°C	1000	HRS	80	0
STORAGE LIFE	1641	MAX485CSA+	150°C	1000	HRS	80	0
STORAGE LIFE	1645	MAX494ESD+	150°C	500	HRS	90	0
STORAGE LIFE	1645	MAX494ESD+	150°C	1000	HRS	90	0
STORAGE LIFE	1645	MAX494ESD+	150°C	500	HRS	90	0
STORAGE LIFE	1645	MAX494ESD+	150°C	1000	HRS	90	0
STORAGE LIFE	1645	MAX494ESD+	150°C	500	HRS	90	0
STORAGE LIFE	1703	MAX13089EESD+	150°C	1000	HRS	80	0
STORAGE LIFE	1705	MAX667ESA+	150°C	1000	HRS	80	0
STORAGE LIFE	1706	DG407EWI+	150°C	1000	HRS	80	0
STORAGE LIFE	1709	MAX253ESA+	150°C	1000	HRS	80	0
<b>Total:</b>						<b>80</b>	<b>0</b>

#### TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1540	MAX4666ESE+	-65C TO +150C (Condition C)	500	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1603	MAX6921AWI/V+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1614	MAX6921AWI+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1615	MAX1709ESE+	-65C TO +150C (Condition C)	500	CYS	93	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1619	MAX3082EESA+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1621	MAX253ESA+	-65C TO +150C (Condition C)	1000	CYS	80	0

TEMP CYCLE, 5' RAMP, 10' DWELL	1623	DG406EWI+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1624	MAX913ESA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1627	MAX13089EESD+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1627	MAX237EWG+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1628	MAX6325CSA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1628	MAX526CCWG+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1630	MAX3082EESA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1631	MAX253ESA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1631	MAX6126BASA25+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1635	MAX494ESD+	-65C TO +150C (Condition C)	500 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1636	DG201ACSE+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1637	MAX691EWE+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1638	MAX15013AASA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1638	MAX222CWN+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1639	MAX913ESA+	-65C TO +150C (Condition C)	1000 CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1639	MAX913ESA+	-65C TO +150C (Condition C)	1000 CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1639	MAX913ESA+	-65C TO +150C (Condition C)	1000 CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1640	MAX6250BESA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1641	MAX485CSA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1645	MAX494ESD+	-65C TO +150C (Condition C)	500 CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1645	MAX494ESD+	-65C TO +150C (Condition C)	500 CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1645	MAX494ESD+	-65C TO +150C (Condition C)	500 CYS	100	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1703	MAX13089EESD+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1705	MAX667ESA+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1706	DG407EWI+	-65C TO +150C (Condition C)	1000 CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1709	MAX253ESA+	-65C TO +150C (Condition C)	1000 CYS	80	0

Total: 0

**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1614	MAX6921AWI+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1621	MAX253ESA+	130C, 85% R.H.	100 HRS	80	0	
BIASED MOISTURE	1623	DG406EWI+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1624	MAX913ESA+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1627	MAX13089EESD+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1627	MAX237EWG+	130C, 85% R.H.	96 HRS	79	0	
BIASED MOISTURE	1628	MAX6325CSA+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1628	MAX526CCWG+	130C, 85% R.H.	96 HRS	79	0	
BIASED MOISTURE	1630	MAX3082EESA+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1631	MAX253ESA+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1631	MAX6126BASA25+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1636	DG201ACSE+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1637	MAX691EWE+	130C, 85% R.H.	1000 HRS	79	0	
BIASED MOISTURE	1638	MAX222CWN+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1640	MAX6250BESA+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1641	MAX485CSA+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1703	MAX13089EESD+		96 HRS	80	0	
BIASED MOISTURE	1705	MAX667ESA+	130C, 85% R.H.	100 HRS	79	0	
BIASED MOISTURE	1706	DG407EWI+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1707	DG201ACSE+	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1709	MAX253ESA+	130C, 85% R.H.	96 HRS	80	0	
<b>Total:</b>						<b>0</b>	

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1612	MAX9643TASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1612	MAX9643TASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1612	MAX9643TASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1635	MAX494ESD+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1638	MAX15013AASA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1639	MAX913ESA+	130C, 85% R.H.	96 HRS	80	0	
MOISTURE SOAK	1639	MAX913ESA+	130C, 85% R.H.	96 HRS	79	0	
MOISTURE SOAK	1639	MAX913ESA+	130C, 85% R.H.	96 HRS	80	0	
<b>Total:</b>						<b>0</b>	

**FAILURE RATE: MTTF (YRS): 474145 FITS: 0.2**