

4/23/2015



**RELIABILITY MONITOR REPORT  
FOR**

**MFN 1.2 $\mu$ m Silicon Gate (B12)**

**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 Process Reliability Monitor. The specific products in this process monitor are:

MAX1932ETC+	MAX4163EZL+T	MAX4475AUT	MAX5066EUI+	MAX6126AASA
MAX6166AESA	MAX669EUB	MAX889TESA+		

The calculated failure rate for devices using this process is:

**FAILURE RATE:    MTTF (YRS): 50873    QUANTITY: 391    FAILS: 0    FITS: 2.2**

The parameters used to calculate this failure rate are as follows:

**Cf: 60%                    Ea: 0.7                    Tu: 25    °C**

The reliability data follows and in this section is the detailed reliability data by stress. The reliability data section includes the latest data available. This report covers data between 4/1/2014 and 3/31/2015 .

**Process Information:**

Process Description:            MFN 1.2µm Silicon Gate (B12)

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	1344	MAX6166AESA+	135°C	1000 HRS	26	0	JXE0CA032CC
HIGH TEMP OP LIFE	1352	MAX669EUB	135°C	192 HRS	79	0	JYGBLA088C#
HIGH TEMP OP LIFE	1352	MAX669EUB	135°C	192 HRS	80	0	JYGBLA089G#
HIGH TEMP OP LIFE	1403	MAX6166AESA+	135°C	1000 HRS	26	0	JXE0CA033AD
HIGH TEMP OP LIFE	1403	MAX6166AESA+	135°C	1000 HRS	26	0	JXE0CA033FD
HIGH TEMP OP LIFE	1409	MAX6166AESA+	135°C	1000 HRS	26	0	JXE0CA037MB
HIGH TEMP OP LIFE	1426	MAX5066EUI+	135°C	1000 HRS	48	0	JJS0GA081A
HIGH TEMP OP LIFE	1438	MAX889TESA+	135°C	1000 HRS	80	0	JUKCGA076B
<b>Total:</b>						<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE		MAX4163EZL+T	150°C	500 HRS	77	0	J9A0DA014E#
STORAGE LIFE		MAX4163EZL+T	150°C	1000 HRS	77	0	J9A0DA014E#
STORAGE LIFE		MAX4163EZL+T	150°C	500 HRS	77	0	J9A0DA014D#
STORAGE LIFE		MAX4163EZL+T	150°C	1000 HRS	77	0	J9A0DA014D#
STORAGE LIFE	1344	MAX6166AESA+	150°C	1000 HRS	77	0	JXE0CA033CC
STORAGE LIFE	1344	MAX6166AESA+	150°C	1000 HRS	77	0	JXE0CA033AD
STORAGE LIFE	1344	MAX6166AESA+	150°C	1000 HRS	77	0	JXE0CA033AF
STORAGE LIFE	1352	MAX669EUB+	150°C	500 HRS	47	0	JYGBLA088C#
STORAGE LIFE	1409	MAX6166AESA+	150°C	1000 HRS	77	0	JXE0CA037MB
STORAGE LIFE	1426	MAX5066EUI+	150°C	1000 HRS	80	0	JJS0GA081A

STORAGE LIFE	1427	MAX1932ETC+	150°C	1000 HRS	80	0	NJ60AA135D
STORAGE LIFE	1438	MAX889TESA+	150°C	1000 HRS	80	0	JUKCGA076B
STORAGE LIFE	N/A	MAX4163EZL+T	150°C	1000 HRS	77	0	J9A0DA013F#
STORAGE LIFE	N/A	MAX4163EZL+T	150°C	500 HRS	77	0	J9A0DA014F#
STORAGE LIFE	N/A	MAX4163EZL+T	150°C	1000 HRS	77	0	J9A0DA014F#
<b>Total:</b>						<b>0</b>	

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**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	500 CYS	77	0	J9A0DA014E#
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	1000 CYS	77	0	J9A0DA014E#
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	500 CYS	77	0	J9A0DA014D#
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX4163EZL+T	-40C TO +125C (Condition G)	1000 CYS	77	0	J9A0DA014D#
TEMP CYCLE, 5' RAMP, 10' DWELL	1344	MAX6166AESA+	-65C TO +150C (Condition C)	525 CYS	77	0	JXE0CA033AF
TEMP CYCLE, 5' RAMP, 10' DWELL	1352	MAX669EUB+	-65C TO +150C (Condition C)	500 CYS	80	0	JYGBLA088C#
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6166AESA+	-65C TO +150C (Condition C)	1000 CYS	77	0	JXE0CA033CC
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6166AESA+	-65C TO +150C (Condition C)	1000 CYS	77	0	JXE0CA033AD
TEMP CYCLE, 5' RAMP, 10' DWELL	1403	MAX6166AESA+	-65C TO +150C (Condition C)	1000 CYS	77	0	JXE0CA033FD
TEMP CYCLE, 5' RAMP, 10' DWELL	1409	MAX6166AESA+	-65C TO +150C (Condition C)	1000 CYS	77	0	JXE0CA037MB
TEMP CYCLE, 5' RAMP, 10' DWELL	1426	MAX5066EUI+	-65C TO +150C (Condition C)	500 CYS	80	0	JJS0GA081A
TEMP CYCLE, 5' RAMP, 10' DWELL	1434	MAX6126AASA30+	-65C TO +150C (Condition C)	500 CYS	80	0	NAI2BA115F
TEMP CYCLE, 5' RAMP, 10' DWELL	1438	MAX889TESA+	-65C TO +150C (Condition C)	500 CYS	80	0	JUKCGA076B
TEMP CYCLE, 5' RAMP, 10' DWELL	2014	MAX4475AUT+T	-65C TO +150C (Condition C)	1000 CYS	77	0	J3J0EA058A#
TEMP CYCLE, 5' RAMP, 10' DWELL	2014	MAX4475AUT+T	-65C TO +150C (Condition C)	1000 CYS	77	0	J3J0EA060E#

TEMP CYCLE, 5' RAMP, 10' DWELL	2014	MAX4475AUT/V+T	-65C TO +150C (Condition C)	1000	CYS	77	0	J3J0EA060G#
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4163EZL+T	-40C TO +125C (Condition G)	1000	CYS	77	0	J9A0DA013F#
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4163EZL+T	-40C TO +125C (Condition G)	500	CYS	77	0	J9A0DA014F#
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX4163EZL+T	-40C TO +125C (Condition G)	1000	CYS	77	0	J9A0DA014F#
<b>Total:</b>							<b>0</b>	

#### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
BIASED MOISTURE	1344	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0	JXE0CA033CC
BIASED MOISTURE	1344	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0	JXE0CA033AD
BIASED MOISTURE	1344	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0	JXE0CA033AF
BIASED MOISTURE	1352	MAX669EUB/V+	130C, 85% R.H.	100	HRS	80	0	JYGBLA088C#
BIASED MOISTURE	1409	MAX6166AESA+	130C, 85% R.H.	100	HRS	45	0	JXE0CA037MB
BIASED MOISTURE	1438	MAX889TESA+	130C, 85% R.H.	100	HRS	79	0	JUKCGA076B
<b>Total:</b>							<b>0</b>	

#### UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
MOISTURE SOAK		MAX4163EZL+T	130C, 85% R.H.	100	HRS	77	0	J9A0DA014E#
MOISTURE SOAK		MAX4163EZL+T	85 C/85% R.H.	500	HRS	77	0	J9A0DA014E#
MOISTURE SOAK		MAX4163EZL+T	130C, 85% R.H.	100	HRS	77	0	J9A0DA014D#
MOISTURE SOAK		MAX4163EZL+T	85 C/85% R.H.	500	HRS	76	0	J9A0DA014D#
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	400	HRS	77	0	JXE0CA033CC
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	400	HRS	77	0	JXE0CA033AD
MOISTURE SOAK	1344	MAX6166AESA+	130C, 85% R.H.	400	HRS	77	0	JXE0CA033AF
MOISTURE SOAK	1352	MAX669EUB+	130C, 85% R.H.	100	HRS	80	0	JYGBLA088C#
MOISTURE SOAK	1409	MAX6166AESA+	130C, 85% R.H.	400	HRS	45	0	JXE0CA037MB
MOISTURE SOAK	N/A	MAX4163EZL+T	130C, 85% R.H.	100	HRS	77	0	J9A0DA014F#
<b>Total:</b>							<b>0</b>	

**FAILURE RATE:**    **MTTF (YRS): 50873**    **QUANTITY: 391**    **FAILS: 0**    **FITS: 2.2**