



7/19/2012

**RELIABILITY MONITOR REPORT  
FOR**

**MFN 80V Bipolar CMOS DMOS (BCD88)**

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

MAX13021ASA+	MAX5023LASA	MAX5033AASA/	MAX5033BASA	MAX5033DASA/
MAX5051AAUI+	MAX6767TALD	MAX6769TALD	MAX9708ETN+	

The calculated failure rate for devices using this process is:

**FAILURE RATE: MTTF (YRS): 50790 QUANTITY: 407 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 7/1/2011 and 6/30/2012 .

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## Process Information:

Process Description: MFN 80V Bipolar CMOS DMOS (BCD88)

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### OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	1141	MAX6767TALD2+	135C	1024 HRS	48	0	J982DA015BA
HIGH TEMP OP LIFE	1152	MAX13021ASA+	135C	1000 HRS	97	0	JP11DQ003AA
HIGH TEMP OP LIFE	1152	MAX13021ASA+	135C	500 HRS	80	0	JP11DA005AA
HIGH TEMP OP LIFE	1206	MAX5023LASA+	135C	500 HRS	45	0	J6R0EA046Q1
HIGH TEMP OP LIFE	1206	MAX5023LASA+	135C	500 HRS	45	0	J6R0EA046Q2
HIGH TEMP OP LIFE	1206	MAX5023LASA+	135C	500 HRS	45	0	J6R0EA046Q3
HIGH TEMP OP LIFE	1216	MAX5051AAUI+	135C	192 HRS	47	0	JAFT9Q001CQ
<b>Total:</b>						<b>0</b>	

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### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	1133	MAX5033DASA/V+	150C	1000 HRS	50	0	J6Y7GA165BH
STORAGE LIFE	1139	MAX5033BASA+	150C	1000 HRS	50	0	J6Y5GA197E
STORAGE LIFE	1152	MAX13021ASA+	150C	1000 HRS	50	0	JP11DQ003AA
STORAGE LIFE	1206	MAX5023LASA+	150C	1000 HRS	80	0	J6R0EA046Q1
STORAGE LIFE	1206	MAX5023LASA+	150C	1000 HRS	80	0	J6R0EA046Q2
STORAGE LIFE	1206	MAX5023LASA+	150C	1000 HRS	80	0	J6R0EA046Q3
STORAGE LIFE	1216	MAX9708ETN+	150C	1000 HRS	50	0	JXJ0CA030E#
<b>Total:</b>						<b>0</b>	

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### TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
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TEMP CYCLE, 5' RAMP, 10' DWELL	1121	MAX6769TALD2+	-65C TO 150C	500	CYS	80	0	J984DQ001AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1121	MAX6769TALD2+	-65C TO 150C	500	CYS	80	0	J984DQ001BA
TEMP CYCLE, 5' RAMP, 10' DWELL	1133	MAX5033DASA/V+	-65C TO 150C	500	CYS	80	0	J6Y7GA165BH
TEMP CYCLE, 5' RAMP, 10' DWELL	1137	MAX5033AASA/V+	-65C TO 150C	500	CYS	80	0	J6Y4GA172DA
TEMP CYCLE, 5' RAMP, 10' DWELL	1139	MAX5033BASA+	-65C TO 150C	500	CYS	80	0	J6Y5GA197E
TEMP CYCLE, 5' RAMP, 10' DWELL	1141	MAX6767TALD2+	-65C TO 150C	1000	CYS	80	1	J982DA015BA
TEMP CYCLE, 5' RAMP, 10' DWELL	1145	MAX6767TALD2+	-65C TO 150C	500	CYS	90	0	J982DA017AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1146	MAX6767TALD2+	-65C TO 150C	500	CYS	90	0	J982DA018AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1152	MAX13021ASA+	-65C TO 150C	500	CYS	80	0	JP11DQ003AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1152	MAX13021ASA+	-65C TO 150C	500	CYS	80	0	JP11DA005AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1152	MAX13021ASA+	-65C TO 150C	1000	CYS	80	0	JP11DA007AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1206	MAX5023LASA+	-65C TO 150C	1000	CYS	80	0	J6R0EA046Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	1216	MAX9708ETN+	-65C TO 150C	500	CYS	80	0	JXJ0CA031B#
<b>Total:</b>							<b>1</b>	

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### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
BIASED MOISTURE	1102	MAX9708ETN+	130C, 85% R.H.	100	HRS	35	0	JXJ0C3013AQ
BIASED MOISTURE	1121	MAX6769TALD2+	130C, 85% R.H.	96	HRS	80	0	J984DQ001AA
BIASED MOISTURE	1121	MAX6769TALD2+	130C, 85% R.H.	96	HRS	80	0	J984DQ001BA
BIASED MOISTURE	1133	MAX5033DASA/V+	130C, 85% R.H.	100	HRS	80	0	J6Y7GA165BH
BIASED MOISTURE	1137	MAX5033AASA/V+	130C, 85% R.H.	100	HRS	80	0	J6Y4GA172DA
BIASED MOISTURE	1139	MAX5033BASA+	130C, 85% R.H.	100	HRS	80	0	J6Y5GA197E
BIASED MOISTURE	1141	MAX6767TALD2+	130C, 85% R.H.	100	HRS	80	0	J982DA015BA
BIASED MOISTURE	1152	MAX13021ASA+	130C, 85% R.H.	100	HRS	80	0	JP11DQ003AA
BIASED MOISTURE	1152	MAX13021ASA+	130C, 85% R.H.	100	HRS	80	0	JP11DA005AA
BIASED MOISTURE	1206	MAX5023LASA+	130C, 85% R.H.	100	HRS	80	0	J6R0EA046Q1

BIASED MOISTURE	1206	MAX5023LASA+	130C, 85% R.H.	100	HRS	80	0	J6R0EA046Q2
BIASED MOISTURE	1206	MAX5023LASA+	130C, 85% R.H.	100	HRS	80	0	J6R0EA046Q3
<b>Total:</b>							<b>0</b>	

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
MOISTURE SOAK	1106	MAX9708ETN+	130C, 85% R.H.	100	HRS	80	0 JXJ0C3014AZ	
MOISTURE SOAK	1121	MAX6769TALD2+	130C, 85% R.H.	96	HRS	79	0 J984DQ001AA	
MOISTURE SOAK	1121	MAX6769TALD2+	130C, 85% R.H.	96	HRS	80	0 J984DQ001BA	
MOISTURE SOAK	1133	MAX5033DASA/V+	130C, 85% R.H.	100	HRS	80	0 J6Y7GA165BH	
MOISTURE SOAK	1137	MAX5033AASA/V+	130C, 85% R.H.	100	HRS	80	0 J6Y4GA172DA	
MOISTURE SOAK	1141	MAX6767TALD2+	130C, 85% R.H.	100	HRS	80	0 J982DA015BA	
MOISTURE SOAK	1145	MAX6767TALD2+	130C, 85% R.H.	100	HRS	80	0 J982DA017AA	
MOISTURE SOAK	1146	MAX6767TALD2+	130C, 85% R.H.	100	HRS	80	0 J982DA018AA	
MOISTURE SOAK	1152	MAX13021ASA+	130C, 85% R.H.	100	HRS	80	0 JP11DQ003AA	
MOISTURE SOAK	1152	MAX13021ASA+	130C, 85% R.H.	100	HRS	80	0 JP11DA005AA	
<b>Total:</b>							<b>0</b>	

**FAILURE RATE: MTTF (YRS): 50790      QUANTITY: 407      FAILS: 0      FITS: 2.2**