



4/8/2009

RELIABILITY MONITOR REPORT  
FOR

**MFN Poly Emitter Complementary Bipolar**

**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:

806-0632-23	806-0696-21+	LMX358AUA+	MAX2510EEI+	MAX3516EUP
MAX3516EUP+	MAX4166ESA+	MAX4167ESA+	MAX4312EEE+	MAX4394ESD+
MAX4394EUD+	MAX4394EUK+	MAX9144ESD+	MAX9144EUD+	MAX942CSA
MAX942CSA+	MAX9714ETJ+	MAX9931EUA	MAX9932EUA+	MAX9957CCB+
MAX9972KCTK	MAX9979KCCC	MAX9979KCT+	MAX9979KCTK	MAX9979KCTK
MAX999EUK+				

The calculated failure rate for devices using this process is:

**FAILURE RATE:**                      **MTTF (YRS): 98451**                      **FITS: 1.2**

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 7/1/2007 and 6/30/2008 .

**Process Information:**

Process Description:                      MFN Poly Emitter Complementary Bipolar

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	0709	MAX942CSA	135C	1000 HRS	78	0	N80BBA050H#
HIGH TEMP OP LIFE	0712	MAX9714ETJ+	135C	500 HRS	80	0	NHH0B3650A#
HIGH TEMP OP LIFE	0717	MAX9931EUA	135C	192 HRS	45	0	NFSYAQ001CQ
HIGH TEMP OP LIFE	0717	MAX9931EUA	135C	192 HRS	50	0	NFSYAQ001CQ
HIGH TEMP OP LIFE	0717	MAX9932EUA+	135C	192 HRS	45	0	NFSXAQ001BQ
HIGH TEMP OP LIFE	0720	MAX942CSA+	135C	1000 HRS	80	0	N80BB3051D
HIGH TEMP OP LIFE	0720	MAX4167ESA+	135C	1000 HRS	80	0	NB7ACA040B
HIGH TEMP OP LIFE	0723	MAX9957CCB+	135C	192 HRS	48	0	NAIZB3003BQ
HIGH TEMP OP LIFE	0731	MAX4166ESA+	135C	500 HRS	80	0	NB6ACA102A#
HIGH TEMP OP LIFE	0731	MAX4166ESA+	135C	1000 HRS	79	0	NB6ACA102A
HIGH TEMP OP LIFE	0732	806-0632-23	135C	192 HRS	50		NM936A031AQ
HIGH TEMP OP LIFE	0738	MAX9979KCTK+W	135C	192 HRS	45	0	NERWB3011AA
HIGH TEMP OP LIFE	0738	MAX9972KCTK+W	135C	500 HRS	45	0	NERWB3011AA
HIGH TEMP OP LIFE	0751	MAX4394ESD+	135C	500 HRS	99	0	N8W0AA014M#
HIGH TEMP OP LIFE	0751	MAX9979KCTK+W	135C	192 HRS	45	0	NERWC4012AB
HIGH TEMP OP LIFE	0751	MAX9979KCT+W	135C	1000 HRS	45	0	NERWC4012AB
HIGH TEMP OP LIFE	0815	806-0696-21+	135C	240 HRS	45	0	NFEZC4005BQ
HIGH TEMP OP LIFE	0815	806-0696-21+	135C	548 HRS	45	0	NFEZC4005BQ
<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	0650	MAX999EUK+	150C	1000 HRS	80	0	NL5ADA039C#
STORAGE LIFE	0709	MAX942CSA+	150C	1000 HRS	80	0	N80BBA050H#
STORAGE LIFE	0720	MAX942CSA+	150C	1000 HRS	80	0	N80BB3051D
STORAGE LIFE	0720	MAX4167ESA+	150C	1000 HRS	80	0	NB7ACA040B
STORAGE LIFE	0731	MAX4166ESA+	150C	1000 HRS	80	0	NB6ACA102A
STORAGE LIFE	0747	MAX4394EUD+	150C	1000 HRS	80	0	N8W0AA014K#
STORAGE LIFE	0752	MAX9144ESD+	150C	1000 HRS	80	0	N21ABA041J
STORAGE LIFE	0752	MAX4167ESA+	150C	1000 HRS	80	0	NB7ACA042P
STORAGE LIFE	0806	MAX4312EEE+	150C	1000 HRS	80	0	NWXADA009J#
<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, 5' RAMP, 10' DWELL	0650	MAX999EUK+	-65C TO 150C	1000 CYS	80	0	NL5ADA039C#
TEMP CYCLE, 5' RAMP, 10' DWELL	0709	MAX942CSA+	-65C TO 150C	1000 CYS	80	0	N80BBA050H#
TEMP CYCLE, 5' RAMP, 10' DWELL	0720	MAX942CSA+	-65C TO 150C	1000 CYS	80	0	N80BB3051D
TEMP CYCLE, 5' RAMP, 10' DWELL	0720	MAX4167ESA+	-65C TO 150C	1000 CYS	80	0	NB7ACA040B
TEMP CYCLE, 5' RAMP, 10' DWELL	0725	MAX9979KCTK+	-65C TO 150C	1500 CYS	74	0	NERWA4004QA
TEMP CYCLE, 5' RAMP, 10' DWELL	0725	MAX9979KCTK+	-65C TO 150C	1500 CYS	74	0	NERWA4004QB
TEMP CYCLE, 5' RAMP, 10' DWELL	0725	MAX9979KCCCTK+	-65C TO 150C	1500 CYS	70	0	NERWA4004QC
TEMP CYCLE, 5' RAMP, 10' DWELL	0731	MAX4166ESA+	-65C TO 150C	1000 CYS	80	0	NB6ACA102A
TEMP CYCLE, 5' RAMP, 10' DWELL	0732	MAX2510EEI+	-65C TO 150C	1000 CYS	77	0	NE8AC2117BA
TEMP CYCLE, 5' RAMP, 10' DWELL	0733	MAX3516EUP	-65C TO 150C	500 CYS	77	0	N0HBFA383A#
TEMP CYCLE, 5' RAMP, 10' DWELL	0733	MAX3516EUP+	-65C TO 150C	1000 CYS	77	0	N0HBFA383A#
TEMP CYCLE, 5' RAMP, 10' DWELL	0747	MAX4394EUD+	-65C TO 150C	500 CYS	80	0	N8W0AAA014K#
TEMP CYCLE, 5' RAMP, 10' DWELL	0747	MAX4394EUD+	-65C TO 150C	1000 CYS	80	0	N8W0AA014K#
TEMP CYCLE, 5' RAMP, 10' DWELL	0752	MAX4167ESA+	-65C TO 150C	1000 CYS	80	0	NB7ACA042P
TEMP CYCLE, 5' RAMP, 10' DWELL	0806	MAX4312EEE+	-65C TO 150C	1000 CYS	80	0	NWXADA009J#
<b>Total:</b>						<b>0</b>	

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**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
BIASED MOISTURE	0650	MAX999EUK+	130C, 85% R.H.	96 HRS	50	0	NL5ADA039C#
BIASED MOISTURE	0709	MAX942CSA+	130C, 85% R.H.	100 HRS	50	0	N80BBA050H#
BIASED MOISTURE	0712	MAX9714ETJ+	130C, 85% R.H.	100 HRS	50	0	NHH0B3650A#
BIASED MOISTURE	0720	MAX942CSA+	130C, 85% R.H.	100 HRS	50	0	N80BB3051D
BIASED MOISTURE	0720	MAX4167ESA+	130C, 85% R.H.	100 HRS	50	0	NB7ACA040B
BIASED MOISTURE	0731	MAX4166ESA+	130C, 85% R.H.	96 HRS	50	0	NB6ACA102A
BIASED MOISTURE	0732	MAX2510EEI+	130C, 85% R.H.	100 HRS	50	0	NE8AC2117BA
BIASED MOISTURE	0733	MAX3516EUP	130C, 85% R.H.	100 HRS	44	0	N0HBFA383A#
BIASED MOISTURE	0734	MAX9144EUD+	130C, 85% R.H.	96 HRS	50	0	N21AB3039B#
BIASED MOISTURE	0747	MAX4394EUD+	130C, 85% R.H.	96 HRS	96	0	N8W0AAA014K#
BIASED MOISTURE	0747	MAX4394EUD+	130C, 85% R.H.	96 HRS	48	0	N8W0AA014K#
BIASED MOISTURE	0752	MAX4167ESA+	130C, 85% R.H.	96 HRS	50	0	NB7ACA042P
BIASED MOISTURE	0806	MAX4312EEE+	130C, 85% R.H.	96 HRS	35	0	NWXADA009J#
<b>Total:</b>						<b>0</b>	

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**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
MOISTURE SOAK	0650	MAX999EUK+	130C, 85% R.H.	100 HRS	80	0	NL5ADA039C#
MOISTURE SOAK	0747	MAX4394EUD+	130C, 85% R.H.	96 HRS	80	0	N8W0AAA014K#
MOISTURE SOAK	0806	MAX4312EEE+	130C, 85% R.H.	96 HRS	80	0	NWXADA009J#
<b>Total:</b>						<b>0</b>	

**FAILURE RATE:****MTTF (YRS): 98451****FITS: 1.2**