



10/8/2010

**RELIABILITY MONITOR REPORT  
FOR**

**X3 SiGe HBT 0.35 $\mu$ m BiCMOS (MB3)**

**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:

MAX2135ETN/V	MAX2163AETL+	MAX2203EWT+	MAX2598ELB+	MAX2599ELB+
MAX2831ETM+	MAX2832ETM+	MAX2839ETN+	MAX2842ETN+	MAX2851ITK+
MAX3540CUPE	MAX3541ELM+	MAX3543CTL+	MAX3625ACUG	MAX3625BEUG
MAX3639ETM+	MAX3799ETJ+	MAX3945ETE+	MAX3987ETM+	

The calculated failure rate for devices using this process is:

**FAILURE RATE: MTTF (YRS): 75381      QUANTITY: 869      FAILS: 0      FITS: 1.5**

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 10/1/2009 and 9/30/2010 .

**Process Information:**

Process Description: X3 SiGe HBT 0.35µm BiCMOS (MB3)

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE		MAX2203EWT+T	135C	1000 HRS	44	0	SPRZBQ001CB
HIGH TEMP OP LIFE	0823	MAX3540CUPETM+	135C	1500 HRS	80	0	SPTCFZ006Q7
HIGH TEMP OP LIFE	0902	MAX2203EWT+T	135C	1000 HRS	45	0	SPRZBQ001AB
HIGH TEMP OP LIFE	0919	MAX3799ETJ+	135C	192 HRS	48	0	SUXZBQ001DQ
HIGH TEMP OP LIFE	0927	MAX3639ETM+	135C	192 HRS	48	0	SVPZB3001IQ
HIGH TEMP OP LIFE	0931	MAX2135ETN/V+	135C	192 HRS	48	0	SOXZCQ003BQ
HIGH TEMP OP LIFE	0934	MAX3543CTL+	135C	192 HRS	48	0	SWHZAQ001FQ
HIGH TEMP OP LIFE	0936	MAX3987ETM+	135C	192 HRS	48	0	SXHZBQ001DQ
HIGH TEMP OP LIFE	0940	MAX3945ETE+	135C	192 HRS	48	0	SD0ZAQ001EQ
HIGH TEMP OP LIFE	0949	MAX2851ITK+	135C	192 HRS	48	0	SWSYDQ003DQ
HIGH TEMP OP LIFE	0950	MAX3541ELM+	135C	138 HRS	80	0	SPTBDZ007Q1
HIGH TEMP OP LIFE	1002	MAX2842ETN+	135C	192 HRS	46	0	SPHZAA006DQ
HIGH TEMP OP LIFE	1013	MAX3625ACUG+	135C	192 HRS	48	0	SWPZBQ002AA
HIGH TEMP OP LIFE	1015	MAX3541ELM+	135C	500 HRS	48	0	SPTBFA017DQ
HIGH TEMP OP LIFE	1015	MAX3541ELM+	135C	1000 HRS	48	0	SPTBFA017DQ
HIGH TEMP OP LIFE	1016	MAX2842ETN+	135C	192 HRS	46	0	SPHZB3012BQ
HIGH TEMP OP LIFE	1020	MAX2832ETM+	135C	192 HRS	48	0	STB3M3278AQ
<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	0946	MAX3625BEUG+	150C	1000 HRS	77	0	SWPZBQ001Q1
STORAGE LIFE	0946	MAX3625BEUG+	150C	1000 HRS	77	0	SWPZBQ001Q2
STORAGE LIFE	0946	MAX3625BEUG+	150C	500 HRS	77	0	SWPZBQ001Q3
STORAGE LIFE	0946	MAX3625BEUG+	150C	1000 HRS	77	0	SWPZAQ001Q3
STORAGE LIFE	0950	MAX3541ELM+	150C	1000 HRS	45	0	SPTBDZ007Q1
STORAGE LIFE	0950	MAX3541ELM+	150C	500 HRS	77	0	SPTBDZ007Q2
STORAGE LIFE	0950	MAX3541ELM+	150C	1000 HRS	77	0	SPTBDZ007Q2
STORAGE LIFE	0950	MAX3541ELM+	150C	500 HRS	77	0	SPTBDZ007Q3
STORAGE LIFE	0950	MAX3541ELM+	150C	1000 HRS	77	0	SPTBDZ007Q3
STORAGE LIFE	1005	MAX2839ETN+	150C	1000 HRS	76	0	SESZEA079C
<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	0920	MAX2163AETL+T	-65C TO 150C	1000 CYS	1612	0	SGRUB3055D
TEMP CYCLE, 5' RAMP, 10' DWELL	0946	MAX3625BEUG+	-65C TO 150C	500 CYS	77	0	SWPZBQ001Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0946	MAX3625BEUG+	-65C TO 150C	500 CYS	77	0	SWPZBQ001Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0946	MAX3625BEUG+	-65C TO 150C	500 CYS	77	0	SWPZBQ001Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	500 CYS	80	0	SPTBDZ007Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	500 CYS	77	0	SPTBDZ007Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	1000 CYS	77	0	SPTBDZ007Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	500 CYS	77	0	SPTBDZ007Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	0950	MAX3541ELM+	-65C TO 150C	1000 CYS	77	0	SPTBDZ007Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1006	MAX2839ETN+	-65C TO 150C	500 CYS	77	0	SESZEA079C
TEMP CYCLE, 5' RAMP, 10' DWELL	1007	MAX2598ELB+	-65C TO 150C	1000 CYS	95	0	SYV3DA062DB
TEMP CYCLE, 5' RAMP, 10' DWELL	1029	MAX2598ELB+	-65C TO 150C	1000 CYS	68	0	SYV3D3068Q1
<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	0933	MAX2599ELB+	85 C/85% R.H.	1000 HRS	48	0	SYV7B3036B
MOISTURE SOAK	0950	MAX3541ELM+	130C, 85% R.H.	1000 HRS	80	0	SPTBDZ007Q1

MOISTURE SOAK	0950	MAX3541ELM+	85 C/85% R.H.	1000	HRS	45	0	SPTBDZ007Q2
MOISTURE SOAK	0950	MAX3541ELM+	85 C/85% R.H.	1000	HRS	45	0	SPTBDZ007Q3
						<b>Total:</b>	<b>0</b>	
<b>FAILURE RATE:</b>	<b>MTTF (YRS):</b>	<b>75381</b>	<b>QUANTITY:</b>	<b>869</b>	<b>FAILS:</b>	<b>0</b>	<b>FITS:</b>	<b>1.5</b>