



7/19/2012

**RELIABILITY MONITOR REPORT
FOR**

X3 Silicon Gate 0.18 μ m CMOS (S18)

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:

AL16	DS2483	MAX14568EEW	MAX14570EZT+	MAX14578AETI
MAX14591ETA+	MAX14592EETI	MAX14596EZA+	MAX14602ETA+	MAX14616AET
MAX14616ETX+	MAX14619ETT+	MAX14626ETT+	MAX14778ETP+	MAX15062ATA+
MAX15070AAU	MAX15108EWP	MAX16130ASA+	MAX16841ASA+	MAX16841ASA+
MAX17048	MAX17129ETE+	MAX17135ETJ+	MAX17149ETE+	MAX17411RGT
MAX17491GTA+	MAX17491GTA+	MAX17492EGD	MAX17497AAT	MAX17498AAT
MAX17601	MAX17601ATA+	MAX17806EUI+	MAX17807EUI+	MAX44005EDT+
MAX44005EDT+	MAX44251AKA	MAX44260AYT	MAX44280AXT	MAX44280AYT
MAX5815AAUD	MAX5974AETE	MAX77663	MAX77663AEW	MAX77663AEW
MAX8955QEMS	MAX8957TEWI+	MAX9599AETG	MAX9647AUK+	MAX9688ETI+
MAX9688RETI+	MAX9695AETM	MAX9695ETM+	MAX9699EWL+	MAX97003EWP
MAX98304CEW	MAX9830ETD+	MAX9832ETG+		

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 413841 QUANTITY: 4600 FAILS: 0 FITS: 0.3

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 .

Process Information:

Process Description: X3 Silicon Gate 0.18µm CMOS (S18)

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE		AL16	108C, 5.0V (PSA)	1000 HRS	77	0	SV6ZEQ002BX
HIGH TEMP OP LIFE		MAX14592EETI+	135C	1000 HRS	56	0	S1GZBQ001EQ
HIGH TEMP OP LIFE		MAX15062ATA+T	135C	1000 HRS	41	0	SN9ZFQ001Q1
HIGH TEMP OP LIFE		MAX15062ATA+T	135C	1000 HRS	45	0	SN9ZFQ001Q2
HIGH TEMP OP LIFE		MAX15062ATA+T	135C	1000 HRS	45	0	SN9ZFQ001Q3
HIGH TEMP OP LIFE		MAX14568EEWA+T	135C	1000 HRS	44	0	SK9ZCQ002A
HIGH TEMP OP LIFE	1050	MAX14578AETI+	135C	192 HRS	44	0	SS0YBQ001DQ
HIGH TEMP OP LIFE	1050	MAX17129ETE+	135C	192 HRS	48	0	SC4ZI0014DQ
HIGH TEMP OP LIFE	1050	MAX14578AETI+	135C	192 HRS	76	0	SS0YBQ001CQ
HIGH TEMP OP LIFE	1050	MAX14578AETI+	135C	600 HRS	44	0	SS0YBQ001EQ
HIGH TEMP OP LIFE	1051	MAX17149ETE+	135C	192 HRS	50	0	SC4ZIQ001GQ
HIGH TEMP OP LIFE	1051	MAX17149ETE+	135C	192 HRS	48	0	SC4ZIQ001HQ
HIGH TEMP OP LIFE	1104	MAX17492EGD+	135C	1000 HRS	40	0	SC4ZGA010Q5
HIGH TEMP OP LIFE	1104	MAX17492EGD+	135C	1000 HRS	45	0	SC4ZGA010Q6
HIGH TEMP OP LIFE	1106	MAX9695ETM+	135C	1000 HRS	48	0	SJ9ZHA004Q1

HIGH TEMP OP LIFE	1106	MAX9695ETM+	135C	1000	HRS	48	0	SJ9ZHA004Q2
HIGH TEMP OP LIFE	1106	MAX9695ETM+	135C	1000	HRS	48	0	SJ9ZHA004Q3
HIGH TEMP OP LIFE	1109	MAX16841ASA+T	135C	192	HRS	78	0	SZ4ZBQ001CQ
HIGH TEMP OP LIFE	1110	MAX15070AAUT+	135C	500	HRS	78	0	SJ0ZDQ002A
HIGH TEMP OP LIFE	1116	MAX17497AATE+	135C	192	HRS	80	0	S0XZBQ001BQ
HIGH TEMP OP LIFE	1118	MAX14602ETA+	135C	240	HRS	80	0	S2GXAQ001BQ
HIGH TEMP OP LIFE	1119	MAX14591ETA+	135C	240	HRS	80	0	S1ZZAQ001CQ
HIGH TEMP OP LIFE	1120	MAX14778ETP+	135C	500	HRS	80	0	S1RZAQ001CF
HIGH TEMP OP LIFE	1122	MAX9647AUK+T	135C	1000	HRS	79	0	S24XXQ001BA
HIGH TEMP OP LIFE	1124	MAX44251AKA+	135C	192	HRS	80	0	SW1ZCQ001DQ
HIGH TEMP OP LIFE	1126	MAX15108EWP+	135C	192	HRS	48	0	SQ7XAQ002AQ
HIGH TEMP OP LIFE	1126	MAX15108EWP+	135C	192	HRS	46	0	SQ7XAQ002BQ
HIGH TEMP OP LIFE	1126	MAX17129ETE+	135C	192	HRS	48	0	SC4ZKQ001BQ
HIGH TEMP OP LIFE	1126	MAX14592EETI+	135C	192	HRS	50	0	S1GZBQ001CQ
HIGH TEMP OP LIFE	1127	MAX9695AETM+	135C	192	HRS	47	0	S2RZCQ001CQ
HIGH TEMP OP LIFE	1131	MAX17498AATE+	135C	192	HRS	80	0	S0XZBQ001CQ
HIGH TEMP OP LIFE	1132	MAX97003EWP+	135C	384	HRS	46	0	S0KZDQ002CQ
HIGH TEMP OP LIFE	1133	MAX17491GTA+	135C	1024	HRS	75	0	SZGZK2013AA
HIGH TEMP OP LIFE	1134	MAX17048	125C, 5.0 VOLTS	192	HRS	77	0	ZJ213800ABA-NPI
HIGH TEMP OP LIFE	1134	MAX17135ETJ+	135C	192	HRS	48	0	SJ6XEA004BQ
HIGH TEMP OP LIFE	1134	MAX16841ASA+	135C	192	HRS	80	0	SAAO2Q002CQ
HIGH TEMP OP LIFE	1136	MAX9599AETG+	135C	192	HRS	80	0	S1JZBQ001EQ
HIGH TEMP OP LIFE	1138	MAX17601ATA+	135C	192	HRS	48	0	S24YXQ001EQ
HIGH TEMP OP LIFE	1139	MAX5815AAUD+	135C	192	HRS	80	0	SABB2Q001BQ
HIGH TEMP OP LIFE	1143	DS2483	125C, 5.25 VOLTS	192	HRS	45	0	ZD214700BC
HIGH TEMP OP LIFE	1143	MAX44280AXT+	135C	192	HRS	80	0	SABE7Q003AQ
HIGH TEMP OP LIFE	1143	MAX14616ETX+	135C	192	HRS	76	0	SACJ8Q002CQ
HIGH TEMP OP LIFE	1143	MAX14616ETX+	135C	192	HRS	80	0	SACJ8Q002BQ
HIGH TEMP OP LIFE	1145	MAX9699EWL+	135C	240	HRS	48	0	SACU5Q001BQ
HIGH TEMP OP LIFE	1147	MAX9688ETI+	135C	1000	HRS	80	0	S2WYBQ001DA
HIGH TEMP OP LIFE	1147	MAX9688RETI+	135C	1000	HRS	80	0	S2WZBQ002DA
HIGH TEMP OP LIFE	1147	MAX9688RETI+	135C	1000	HRS	79	0	S2WZBQ003CA
HIGH TEMP OP LIFE	1150	MAX9832ETG+	135C	500	HRS	80	0	VTHZEQ001A
HIGH TEMP OP LIFE	1150	MAX9832ETG+	135C	500	HRS	80	0	VTHZEQ001B
HIGH TEMP OP LIFE	1150	MAX17491GTA+	135C	192	HRS	75	0	SZGZK2014DB
HIGH TEMP OP LIFE	1150	MAX17491GTA+	135C	1000	HRS	75	0	SZGZK2014D#
HIGH TEMP OP LIFE	1152	MAX14626ETT+	135C	192	HRS	48	0	SACV9Q001CQ

HIGH TEMP OP LIFE	1152	MAX9695ETM+	135C	192	HRS	48	0	SJ9ZH2028DA
HIGH TEMP OP LIFE	1152	MAX9695ETM+	135C	192	HRS	48	0	SJ9ZH2028EA
HIGH TEMP OP LIFE	1153	MAX14619ETT+	135C	192	HRS	80	0	SABG8Q001BQ
HIGH TEMP OP LIFE	1203	MAX14616ETX+	135C	192	HRS	80	0	SACJ8A020AQ
HIGH TEMP OP LIFE	1205	MAX17806EUI+	135C	1000	HRS	80	0	SAEK42032BA1
HIGH TEMP OP LIFE	1207	MAX44005EDT+	135C	1000	HRS	80	0	SACG7Q00BQ7
HIGH TEMP OP LIFE	1207	MAX44005EDT+	135C	1000	HRS	80	0	SACG7Q003Q7
HIGH TEMP OP LIFE	1207	MAX17806EUI+	135C	1000	HRS	79	0	SAEK42034C1
HIGH TEMP OP LIFE	1208	MAX17601	135C, 6.0V (PSA)	192	HRS	47	0	S24YXQ001EQ
HIGH TEMP OP LIFE	1208	MAX17601	135C, 6.0V (PSA)	192	HRS	80	0	S24YXQ001EQ
HIGH TEMP OP LIFE	1208	MAX17601ATA+	135C	192	HRS	80	0	S24YXQ001FQ
HIGH TEMP OP LIFE	1208	MAX44005EDT+	135C	1000	HRS	80	0	SACG7Q002Q8
HIGH TEMP OP LIFE	1208	MAX17491GTA+T	135C	1000	HRS	74	0	SZGZK2024FB
HIGH TEMP OP LIFE	1211	MAX17806EUI+	135C	1000	HRS	79	0	SAEK4A135C1
HIGH TEMP OP LIFE	1213	MAX16130ASA+	135C	192	HRS	80	0	SAFE5Q002BQ
HIGH TEMP OP LIFE	1217	MAX14616AETX+	135C	192	HRS	80	0	SAFU7A045BQ
HIGH TEMP OP LIFE	N/A	MAX14570EZT+	135C	1000	HRS	77	0	SV6ZEQ002BX
HIGH TEMP OP LIFE	N/A	MAX77663AEWJ+T	135C	1000	HRS	43	0	SAAV53003CA
HIGH TEMP OP LIFE	N/A	MAX77663AEWJ+T	135C	1000	HRS	44	0	SAAV53003CB
Total:							0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
STORAGE LIFE		MAX15062ATA+T	150C	1000	HRS	77	0	SN9ZDQ001Q1
STORAGE LIFE		MAX15062ATA+T	150C	1000	HRS	77	0	SN9ZDQ001Q2
STORAGE LIFE		MAX15062ATA+T	150C	1000	HRS	77	0	SN9ZDQ001Q3
STORAGE LIFE	1106	MAX9695ETM+	150C	1000	HRS	77	0	SJ9ZHA004Q1
STORAGE LIFE	1108	MAX8955QEMS+	150C	1000	HRS	77	0	ST4TDQ003FA
STORAGE LIFE	1108	MAX8955QEMS+	150C	500	HRS	77	0	ST4TDQ003EA
STORAGE LIFE	1110	MAX15070AAUT+	150C	1000	HRS	78	0	SJ0ZDQ002A
STORAGE LIFE	1145	MAX17806EUI+	150C	1000	HRS	80	0	R25516BI2A
STORAGE LIFE	1146	MAX17806EUI+	150C	1000	HRS	80	0	ST8ZEA013EB
STORAGE LIFE	1147	MAX9688ETI+	150C	1065	HRS	80	0	S2WYBQ001DA
STORAGE LIFE	1147	MAX9688RETI+	150C	1065	HRS	80	0	S2WZBQ002DA
STORAGE LIFE	1147	MAX9688RETI+	150C	1065	HRS	80	0	S2WZBQ003CA
STORAGE LIFE	1149	MAX44260AYT+T	150C	1000	HRS	80	0	SW2ZDQ002D#

STORAGE LIFE	1202	MAX44280AYT+T	150C	1000	HRS	80	0	SABE7Q002C#
STORAGE LIFE	1204	MAX44260AYT+T	150C	1000	HRS	80	0	SW2ZDQ002E#
STORAGE LIFE	1205	MAX17806EUI+	150C	1000	HRS	80	0	SAEK42032BA
STORAGE LIFE	1205	MAX17806EUI+	150C	1000	HRS	80	0	SAEK42032BA2
STORAGE LIFE	1207	MAX44005EDT+	150C	500	HRS	80	0	SACG7Q00BQ7
STORAGE LIFE	1207	MAX44005EDT+	150C	1000	HRS	80	0	SACG7Q003Q7
STORAGE LIFE	1207	MAX17806EUI+	150C	1000	HRS	80	0	SAEK42034C
STORAGE LIFE	1208	MAX44005EDT+	150C	1000	HRS	80	0	SACG7Q002Q8
STORAGE LIFE	1211	MAX17807EUI+	150C	1000	HRS	79	0	SAEK4A055C2
STORAGE LIFE	1213	MAX17806EUI+	150C	500	HRS	80	0	SAEK4A035G
STORAGE LIFE	N/A	MAX14568EEWA+T	150C	1000	HRS	77	0	SK9ZCQ002A
STORAGE LIFE	N/A	MAX14568EEWA+T	150C	1000	HRS	76	0	SK9ZCQ002B
STORAGE LIFE	N/A	MAX14568EEWA+T	150C	1000	HRS	77	0	SK9ZCQ002C
STORAGE LIFE	N/A	MAX14570EZT+	150C	1000	HRS	77	0	SV6ZEQ002BX
STORAGE LIFE	N/A	MAX14570EZT+	150C	1000	HRS	77	0	SV6ZEQ002CG
STORAGE LIFE	N/A	MAX14570EZT+	150C	1000	HRS	77	0	SV6ZDQ001CV
STORAGE LIFE	N/A	MAX77663	150C	1000	HRS	77	0	SAAV53003CA
STORAGE LIFE	N/A	MAX77663	150C	1000	HRS	77	0	SAAV53003CB
STORAGE LIFE	N/A	MAX77663	150C	1000	HRS	77	0	SAAV53003CC
STORAGE LIFE	N/A	MAX14596EZA+T	150C	500	HRS	77	0	S6ZZAQ001C
STORAGE LIFE	N/A	MAX14596EZA+T	150C	500	HRS	77	0	S6ZZAQ001AD
STORAGE LIFE	N/A	MAX14596EZA+T	150C	500	HRS	77	0	S6ZZAQ001AE
Total:							0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
TEMP CYCLE, 5' RAMP, 10' DWELL		MAX15062ATA+T	-65C TO 150C	1000	CYS	77	0	SN9ZDQ001Q1
TEMP CYCLE, 5' RAMP, 10' DWELL		MAX15062ATA+T	-65C TO 150C	1000	CYS	77	0	SN9ZDQ001Q2
TEMP CYCLE, 5' RAMP, 10' DWELL		MAX15062ATA+T	-65C TO 150C	1000	CYS	77	0	SN9ZDQ001Q3
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX98304CEWL+	-40C TO +125C	500	CYS	100	0	SQ2ZCA009A#
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX98304CEWL+	-40C TO +125C	500	CYS	97	0	SQ2ZCA019B#
TEMP CYCLE, 5' RAMP, 10' DWELL	1036	MAX9830ETD+T	-65C TO 150C	1000	CYS	77	0	SB6SBQ003D#
TEMP CYCLE, 5' RAMP, 10' DWELL	1107	MAX5974AETE+	-65C TO 150C	1000	CYS	77	0	SL6ZBQ002AH
TEMP CYCLE, 5' RAMP, 10' DWELL	1111	MAX17411RGTM+W	-65C TO 150C	1000	CYS	77	0	SM0ZH3056DC

TEMP CYCLE, 5' RAMP, 10' DWELL	1143	MAX9695ETM+	-65C TO 150C	500	CYS	77	0	SJ9ZHA029Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1143	MAX9695ETM+	-65C TO 150C	1000	CYS	77	0	SJ9ZHA029Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1146	MAX17806EUI+	-65C TO 150C	1000	CYS	80	0	ST8ZEA013EB
TEMP CYCLE, 5' RAMP, 10' DWELL	1149	MAX44260AYT+T	-65C TO 150C	1000	CYS	80	0	SW2ZDQ002D#
TEMP CYCLE, 5' RAMP, 10' DWELL	1202	MAX44280AYT+T	-65C TO 150C	1000	CYS	80	0	SABE7Q002C#
TEMP CYCLE, 5' RAMP, 10' DWELL	1204	MAX44260AYT+T	-65C TO 150C	1000	CYS	80	0	SW2ZDQ002E#
TEMP CYCLE, 5' RAMP, 10' DWELL	1205	MAX17806EUI+	-65C TO 150C	500	CYS	80	0	SAEK42032BA
TEMP CYCLE, 5' RAMP, 10' DWELL	1207	MAX17806EUI+	-65C TO 150C	500	CYS	79	0	SAEK42034C
TEMP CYCLE, 5' RAMP, 10' DWELL	1213	MAX17806EUI+	-65C TO 150C	500	CYS	80	0	SAEK4A035G
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14568EEWA+T	-40C TO +125C	1000	CYS	77	0	SK9ZCQ002A
TEMP CYCLE, 5' RAMP, 10' DWELL	N/A	MAX14568EEWA+T	-65C TO 150C	500	CYS	77	0	SK9ZCQ002A
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14568EEWA+T	-40C TO +125C	1000	CYS	77	0	SK9ZCQ002B
TEMP CYCLE, 5' RAMP, 10' DWELL	N/A	MAX14568EEWA+T	-65C TO 150C	500	CYS	77	0	SK9ZCQ002B
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14568EEWA+T	-40C TO +125C	1000	CYS	77	0	SK9ZCQ002C
TEMP CYCLE, 5' RAMP, 10' DWELL	N/A	MAX14568EEWA+T	-65C TO 150C	500	CYS	77	0	SK9ZCQ002C
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14570EZT+	-40C TO +125C	1000	CYS	77	0	SV6ZEQ002BX
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14570EZT+	-40C TO +125C	1000	CYS	77	0	SV6ZEQ002CG
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14570EZT+	-40C TO +125C	1000	CYS	77	0	SV6ZDQ001CV
TEMP CYCLE, 5' RAMP, 10' DWELL	N/A	MAX77663	-65C TO 150C	1000	CYS	75	0	SAAV53003CA
TEMP CYCLE, 5' RAMP, 10' DWELL	N/A	MAX77663	-65C TO 150C	1000	CYS	75	0	SAAV53003CB
TEMP CYCLE, 5' RAMP, 10' DWELL	N/A	MAX77663	-65C TO 150C	1000	CYS	77	0	SAAV53003CC
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX8957TEWI+T	-40C TO +125C	500	CYS	60	0	S0WYEQ001DA
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14596EZA+T	-40C TO +125C	500	CYS	77	0	S6ZZAQ001C
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14596EZA+T	-40C TO +125C	500	CYS	77	0	S6ZZAQ001AD
TEMP CYCLE, 15' RAMP, 15' DWELL	N/A	MAX14596EZA+T	-40C TO +125C	500	CYS	77	0	S6ZZAQ001AE
TEMP CYCLE, 5' RAMP, 10' DWELL	NA	MAX77663AEWJ+	-65C TO 150C	500	CYS	77	0	SAAV5Q003B

TEMP CYCLE, 5' RAMP, 10' DWELL	NA	MAX77663AEWJ+	-65C TO 150C	500	CYS	77	1	SAAV5Q003C
TEMP CYCLE, 5' RAMP, 10' DWELL	NA	MAX77663AEWJ+	-65C TO 150C	500	CYS	77	0	SAAV5Q003D
Total:							1	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
BIASED MOISTURE	1149	MAX44260AYT+T	130C, 85% R.H.	100	HRS	70	0 SW2ZDQ002D#	
BIASED MOISTURE	1202	MAX44280AYT+T	130C, 85% R.H.	100	HRS	70	0 SABE7Q002C#	
BIASED MOISTURE	1204	MAX44260AYT+T	130C, 85% R.H.	100	HRS	69	0 SW2ZDQ002E#	
BIASED MOISTURE	1205	MAX17806EUI+	130C, 85% R.H.	100	HRS	47	0 SAEK42032BA	
Total:							0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
MOISTURE SOAK		MAX15062ATA+T	130C, 85% R.H.	1000	HRS	77	0 SN9ZDQ001Q2	
MOISTURE SOAK		MAX15062ATA+T	85 C/85% R.H.	1000	HRS	19	0 SN9ZDQ001Q3	
MOISTURE SOAK	1207	MAX44005EDT+	85 C/85% R.H.	500	HRS	80	0 SACG7Q003Q7	
MOISTURE SOAK	N/A	MAX77663	85 C/85% R.H.	1000	HRS	45	0 SAAV53003CA	
MOISTURE SOAK	N/A	MAX77663	85 C/85% R.H.	1000	HRS	41	0 SAAV53003CB	
MOISTURE SOAK	N/A	MAX77663	85 C/85% R.H.	500	HRS	45	0 SAAV53003CC	
Total:							0	

FAILURE RATE: MTTF (YRS): 413841 QUANTITY: 4600 FAILS: 0 FITS: 0.3