

10/23/2014



**RELIABILITY MONITOR REPORT
FOR**

X3 0.18µm Silicon Gate (S18)

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:

MAX15070AAU	MAX16962RAT	MAX16993AGJC	MAX16993AGJC	MAX17491GTA+
MAX2180AETG	MAX2181AETE/	MAX2181ETE/V	MAX44259AUK	MAX44284HAU
MAX44285FAU	MAX44285TAU	MAX44285TAU		

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 112668 QUANTITY: 1064 FAILS: 0 FITS: 1.0

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 10/1/2013 and 9/30/2014 .

Process Information:

Process Description: X3 0.18µm Silicon Gate (S18)

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	1310	MAX2181ETE/V+	135°C	192 HRS	80	0	SAKR6Q003AA
HIGH TEMP OP LIFE	1313	MAX15070AAUT+	135°C	1000 HRS	80	0	SJ0ZDQ002Q3
HIGH TEMP OP LIFE	1317	MAX2180AETG+	135°C	1000 HRS	35	0	SAHU5Q001Q1
HIGH TEMP OP LIFE	1317	MAX2180AETG+	135°C	1000 HRS	35	0	SAHU5Q001Q2
HIGH TEMP OP LIFE	1317	MAX2180AETG+	135°C	1000 HRS	35	0	SAHU5Q001Q3
HIGH TEMP OP LIFE	1323	MAX16962RATEA/V+	135°C	1000 HRS	80	0	SAGC3A006Q1
HIGH TEMP OP LIFE	1323	MAX16962RATEA/V+	135°C	1000 HRS	40	0	SAGC3A006Q2
HIGH TEMP OP LIFE	1323	MAX16962RATEA/V+	135°C	1000 HRS	40	0	SAGC3A006Q3
HIGH TEMP OP LIFE	1330	MAX44285TAUA+	135°C	308 HRS	80	0	SANS0Q003AQ
HIGH TEMP OP LIFE	1330	MAX44285FAUA+	135°C	168 HRS	80	0	SANS0A003BD
HIGH TEMP OP LIFE	1330	MAX44285FAUA+	135°C	692 HRS	80	0	SANS1Q003BD
HIGH TEMP OP LIFE	1342	MAX44284HAUT+	135°C	192 HRS	79	0	SAOK9Q002AQ
HIGH TEMP OP LIFE	1412	MAX44285TAUA+	135°C	692 HRS	80	0	SANS0A004D
HIGH TEMP OP LIFE	1415	MAX44285TAUA+	135°C	524 HRS	80	0	SANS0A006C
HIGH TEMP OP LIFE	1415	MAX44285TAUA+	135°C	1000 HRS	80	0	SANS0A006C#
HIGH TEMP OP LIFE	1425	MAX16993AGJC/VY+CT	135°C	192 HRS	80	0	SAKP6Q002K
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	1323	MAX16962RATEA/V+	150°C	1000 HRS	80	0	SAGC3A006Q1

STORAGE LIFE	1323	MAX16962RATEA/V+	150°C	1000	HRS	80	0	SAGC3A006Q2
STORAGE LIFE	1323	MAX16962RATEA/V+	150°C	1000	HRS	80	0	SAGC3A006Q3
STORAGE LIFE	1323	MAX16962RATEA/V+	150°C	1000	HRS	80	0	SAGC3A006Q4
STORAGE LIFE	1328	MAX2181AETE/V+	150°C	1000	HRS	80	0	SAKR7A004AC
STORAGE LIFE	1328	MAX2181AETE/V+	150°C	1000	HRS	80	0	SAKR6A005AB
STORAGE LIFE	1330	MAX44285FAUA+	150°C	1000	HRS	80	0	SANS1Q003BD
STORAGE LIFE	1412	MAX44285TAUA+	150°C	1000	HRS	80	0	SANS0A004D
STORAGE LIFE	1415	MAX44285TAUA=	150°C	1000	HRS	79	0	SANS0A006C#
STORAGE LIFE	1423	MAX44259AUK+	150°C	500	HRS	80	0	SW2YDQ001Q1
STORAGE LIFE	1423	MAX44259AUK+	150°C	500	HRS	80	0	SW2YDQ001Q3
STORAGE LIFE	1424	MAX44259AUK+	150°C	500	HRS	80	0	SW2YDQ001Q2
STORAGE LIFE	1425	MAX16993AGJC/VY+CT	150°C	1000	HRS	80	0	SAKP6Q002K
Total:							0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
TEMP CYCLE, 5' RAMP, 10' DWELL	1320	MAX16993AGJC/VY+	-65C TO +150C (Condition C)	500	CYS	80	0	SAKP6Q002B#
TEMP CYCLE, 5' RAMP, 10' DWELL	1321	MAX16993AGJC/VY+	-65C TO +150C (Condition C)	500	CYS	80	0	SAKP6Q003AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1323	MAX16962RATEA/V+	-65C TO +150C (Condition C)	1000	CYS	80	0	SAGC3A006Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	1323	MAX16962RATEA/V+	-65C TO +150C (Condition C)	1000	CYS	80	0	SAGC3A006Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	1323	MAX16962RATEA/V+	-65C TO +150C (Condition C)	1000	CYS	80	0	SAGC3A006Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1323	MAX16962RATEA/V+	-65C TO +150C (Condition C)	1000	CYS	80	0	SAGC3A006Q4
TEMP CYCLE, 5' RAMP, 10' DWELL	1328	MAX2181AETE/V+	-65C TO +150C (Condition C)	500	CYS	80	0	SAKR7A004AC
TEMP CYCLE, 5' RAMP, 10' DWELL	1328	MAX2181AETE/V+	-65C TO +150C (Condition C)	500	CYS	80	0	SAKR6A005AB
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX44285TAUA+	-65C TO +150C (Condition C)	1000	CYS	76	0	SANS0Q003A#
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX44285FAUA+	-65C TO +150C (Condition C)	500	CYS	80	0	SANS1Q003BD
TEMP CYCLE, 5' RAMP, 10' DWELL	1331	MAX2181AETE/V+	-65C TO +150C (Condition C)	500	CYS	80	0	SAKR7A004AF

TEMP CYCLE, 5' RAMP, 10' DWELL	1412	MAX44285TAUA+	-65C TO +150C (Condition C)	500	CYS	79	0	SANS0A004D
TEMP CYCLE, 5' RAMP, 10' DWELL	1415	MAX44285TAUA=	-65C TO +150C (Condition C)	1000	CYS	80	0	SANS0A006C#
TEMP CYCLE, 5' RAMP, 10' DWELL	1422	MAX44285FAUA+	-65C TO +150C (Condition C)	1000	CYS	80	0	SANS0A004Q4
TEMP CYCLE, 5' RAMP, 10' DWELL	1422	MAX44285FAUA+	-65C TO +150C (Condition C)	1000	CYS	80	0	SANS0A004Q5
TEMP CYCLE, 5' RAMP, 10' DWELL	1422	MAX44285FAUA+	-65C TO +150C (Condition C)	1000	CYS	80	0	SANS0A004Q6
TEMP CYCLE, 5' RAMP, 10' DWELL	1423	MAX44259AUK+	-65C TO +150C (Condition C)	1000	CYS	80	0	SW2YDQ001Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	1423	MAX44259AUK+	-65C TO +150C (Condition C)	1000	CYS	80	0	SW2YDQ001Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1424	MAX44259AUK+	-65C TO +150C (Condition C)	1000	CYS	80	0	SW2YDQ001Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	1425	MAX16993AGJC/VY+CT	-65C TO +150C (Condition C)	1000	CYS	80	0	SAKP6Q002K
Total:							0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
BIASED MOISTURE	1248	MAX17491GTA+T	130C, 85% R.H.	192	HRS	45	0 SZGZKA026SA
BIASED MOISTURE	1248	MAX17491GTA+T	130C, 85% R.H.	192	HRS	45	0 SZGZKA026SB
BIASED MOISTURE	1248	MAX17491GTA+T	130C, 85% R.H.	192	HRS	44	0 SZGZKA026SC
BIASED MOISTURE	1317	MAX2180AETG+	130C, 85% R.H.	200	HRS	80	0 SAHU5Q001Q1
BIASED MOISTURE	1317	MAX2180AETG+	130C, 85% R.H.	200	HRS	80	0 SAHU5Q001Q2
BIASED MOISTURE	1317	MAX2180AETG+	130C, 85% R.H.	200	HRS	79	0 SAHU5Q001Q3
BIASED MOISTURE	1320	MAX16993AGJC/VY+	130C, 85% R.H.	100	HRS	26	0 SAKP6Q002B#
BIASED MOISTURE	1321	MAX16993AGJC/VY+	130C, 85% R.H.	100	HRS	27	0 SAKP6Q003AA
BIASED MOISTURE	1323	MAX16962RATEA/V+	130C, 85% R.H.	192	HRS	45	0 SAGC3A006Q1
BIASED MOISTURE	1323	MAX16962RATEA/V+	130C, 85% R.H.	192	HRS	44	0 SAGC3A006Q2
BIASED MOISTURE	1323	MAX16962RATEA/V+	130C, 85% R.H.	192	HRS	45	0 SAGC3A006Q3

BIASED MOISTURE	1323	MAX16962RATEA/V+	130C, 85% R.H.	192	HRS	45	0	SAGC3A006Q4
BIASED MOISTURE	1328	MAX2181AETE/V+	130C, 85% R.H.	100	HRS	32	0	SAKR7A004AC
BIASED MOISTURE	1328	MAX2181ETE/V+	130C, 85% R.H.	100	HRS	32	0	SAKR6A005AB
BIASED MOISTURE	1330	MAX44285TAUA+	130C, 85% R.H.	100	HRS	77	0	SANS0Q003A#
BIASED MOISTURE	1330	MAX44285TAUA+	130C, 85% R.H.	100	HRS	30	0	SANS0Q003AB
BIASED MOISTURE	1330	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0	SANS1Q003BD
BIASED MOISTURE	1331	MAX2181AETE/V+	130C, 85% R.H.	100	HRS	48	0	SAKR7A004AF
BIASED MOISTURE	1412	MAX44285TAUA+	130C, 85% R.H.	100	HRS	80	0	SANS0A004D
BIASED MOISTURE	1415	MAX44285TAUA=	130C, 85% R.H.	100	HRS	80	0	SANS0A006C#
BIASED MOISTURE	1422	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0	SANS0A004Q4
BIASED MOISTURE	1422	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0	SANS0A004Q5
BIASED MOISTURE	1422	MAX44285FAUA+	130C, 85% R.H.	100	HRS	80	0	SANS0A004Q6
BIASED MOISTURE	1425	MAX16993AGJC/VY+CT	130C, 85% R.H.	96	HRS	80	0	SAKP6Q002K
Total:							0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
MOISTURE SOAK	1317	MAX2180AETG+	130C, 85% R.H.	500	HRS	80	0 SAHU5Q001Q1
MOISTURE SOAK	1317	MAX2180AETG+	130C, 85% R.H.	500	HRS	80	0 SAHU5Q001Q3
MOISTURE SOAK	1317	MAX2180AETG+	130C, 85% R.H.	500	HRS	80	0 SAHU5Q001Q4
MOISTURE SOAK	1320	MAX16993AGJC/VY+	130C, 85% R.H.	100	HRS	80	0 SAKP6Q002B#
MOISTURE SOAK	1321	MAX16993AGJC/VY+	130C, 85% R.H.	100	HRS	80	0 SAKP6Q003AA
MOISTURE SOAK	1323	MAX16962RATEA/V+	130C, 85% R.H.	500	HRS	80	0 SAGC3A006Q1
MOISTURE SOAK	1323	MAX16962RATEA/V+	130C, 85% R.H.	500	HRS	79	0 SAGC3A006Q2
MOISTURE SOAK	1323	MAX16962RATEA/V+	130C, 85% R.H.	500	HRS	80	0 SAGC3A006Q3
MOISTURE SOAK	1323	MAX16962RATEA/V+	130C, 85% R.H.	500	HRS	80	0 SAGC3A006Q4
MOISTURE SOAK	1328	MAX2181AETE/V+	130C, 85% R.H.	100	HRS	80	0 SAKR7A004AC

MOISTURE SOAK	1328	MAX2181AETE/V+	130C, 85% R.H.	100	HRS	80	0	SAKR6A005AB
MOISTURE SOAK	1331	MAX2181AETE/V+	130C, 85% R.H.	100	HRS	80	0	SAKR7A004AF
MOISTURE SOAK	1425	MAX16993AGJC/VY+CT	130C, 85% R.H.	96	HRS	80	0	SAKP6Q002K

Total: 0

FAILURE RATE: MTTF (YRS): 112668 QUANTITY: 1064 FAILS: 0 FITS: 1.0