

10/23/2014



**RELIABILITY MONITOR REPORT
FOR**

San Antonio 0.18 μ m 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:

MAX14562ETA+	MAX14576EVB+	MAX14676AEW	MAX14778ETP+	MAX14921ECS+
MAX16840ATB+	MAX16936RAT	MAX16936RAT	MAX16990ATC	MAX17048
MAX17491GTA+	MAX44005EDT+	MAX44242AUA	MAX5394L	MAX5704AUB+
MAX98400AET	MAX98400ETX+			

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 152865 QUANTITY: 1404 FAILS: 0 FITS: 0.7

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: San Antonio 0.18µm Silicon Gate (S18)

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	1327	MAX17491GTA+	135°C	1000 HRS	79	0	TALM4Z001C
HIGH TEMP OP LIFE	1330	MAX16840ATB+	135°C	1000 HRS	79	0	TAMC4U004H
HIGH TEMP OP LIFE	1331	MAX14562ETA+	135°C	1000 HRS	80	0	TALN4Z003A
HIGH TEMP OP LIFE	1332	MAX14576EVB+	135°C	62 HRS	80	0	TANG9Q001AQ
HIGH TEMP OP LIFE	1334	MAX5704AUB+	135°C	500 HRS	80	0	TAMB0Z001BC
HIGH TEMP OP LIFE	1337	MAX16840ATB+	135°C	1000 HRS	79	0	TAMC4U005P
HIGH TEMP OP LIFE	1339	MAX44242AUA+	135°C	192 HRS	80	0	TAOP4Q002BQ
HIGH TEMP OP LIFE	1345	MAX14676AEWO+	135°C	192 HRS	48	0	TAOW5Q002EQ
HIGH TEMP OP LIFE	1346	MAX17491GTA+	135°C	1000 HRS	79	0	TALM4U003A
HIGH TEMP OP LIFE	1350	MAX17048	125C, 5.0 VOLTS	1024 HRS	80	0	FX496952ABA
HIGH TEMP OP LIFE	1402	MAX5394L	135C, 5.5V (PSA)	1000 HRS	80	0	TAPY5Q001B
HIGH TEMP OP LIFE	1402	MAX5394L	135C, 5.5V (PSA)	1000 HRS	80	0	TAPY5Q002A
HIGH TEMP OP LIFE	1402	MAX5394L	135C, 6.0V (PSA)	1000 HRS	80	0	TAPY5Q003B
HIGH TEMP OP LIFE	1403	MAX98400ETX+	135°C	500 HRS	80	0	TD7ZF2029A
HIGH TEMP OP LIFE	1415	MAX16936RATEA/V+CA	135°C	1000 HRS	80	0	TAQT1Q001AA
HIGH TEMP OP LIFE	1419	MAX98400AETX+	135°C	1000 HRS	80	0	TD7ZF2032AA
HIGH TEMP OP LIFE	1426	MAX14778ETP+	135°C	192 HRS	80	0	TAMB8Z001B

HIGH TEMP OP LIFE	1427	MAX14921ECS+	135°C	500	HRS	80	0	TATS4Z001E#
Total:							0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
STORAGE LIFE	1314	MAX44005EDT+	150°C	1000 HRS	196	0	TAJK1Q001F	
STORAGE LIFE	1327	MAX17491GTA+	150°C	1000 HRS	80	0	TALM4Z001C	
STORAGE LIFE	1330	MAX16840ATB+	150°C	1000 HRS	80	0	TAMC4U004H	
STORAGE LIFE	1331	MAX14562ETA+	150°C	1000 HRS	80	0	TALN4Z003A	
STORAGE LIFE	1334	MAX5704AUB+	150°C	1000 HRS	80	0	TAMB0Z001BC	
STORAGE LIFE	1337	MAX16840ATB+	150°C	1000 HRS	80	0	TAMC4U005P	
STORAGE LIFE	1346	MAX17491GTA+	150°C	1000 HRS	80	0	TALM4U003A	
STORAGE LIFE	1350	MAX17048	150°C	1000 HRS	80	0	FX496952ABA	
STORAGE LIFE	1402	MAX5394L	150°C	1000 HRS	80	0	TAPY5Q001A	
STORAGE LIFE	1402	MAX5394L	150°C	1000 HRS	80	0	TAPY5Q002B	
STORAGE LIFE	1402	MAX5394L	150°C	1000 HRS	80	0	TAPY5Q003B	
STORAGE LIFE	1415	MAX16936RATEA/V+CA	150°C	1000 HRS	77	0	TAQT1Q001AA	
STORAGE LIFE	1424	MAX16990ATCD/V+	150°C	1000 HRS	50	0	TAQJ4Q001F#	
STORAGE LIFE	1426	MAX14778ETP+	150°C	1000 HRS	80	0	TAMB8Z001B	
STORAGE LIFE	1427	MAX14921ECS+	150°C	500 HRS	80	0	TATS4Z001E#	
Total:							0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
TEMP CYCLE, 5' RAMP, 10' DWELL	1330	MAX16840ATB+	-65C TO +150C (Condition C)	500 CYS	80	0	TAMC4U004H
TEMP CYCLE, 5' RAMP, 10' DWELL	1331	MAX14562ETA+	-65C TO +150C (Condition C)	500 CYS	80	0	TALN4Z003A
TEMP CYCLE, 5' RAMP, 10' DWELL	1334	MAX5704AUB+	-65C TO +150C (Condition C)	500 CYS	80	0	TAMB0Z001BC
TEMP CYCLE, 5' RAMP, 10' DWELL	1337	MAX16840ATB+	-65C TO +150C (Condition C)	500 CYS	80	0	TAMC4U005P
TEMP CYCLE, 5' RAMP, 10' DWELL	1346	MAX17491GTA+	-65C TO +150C (Condition C)	500 CYS	80	0	TALM4U003A
TEMP CYCLE, 15' RAMP, 15' DWELL	1410	MAX5394L	-40C TO +125C (Condition G)	1000 CYS	80	0	TAPYQ003REL
TEMP CYCLE, 15' RAMP, 15' DWELL	1410	MAX5394L	-40C TO +125C (Condition G)	1000 CYS	80	0	TAPYQ002REL

TEMP CYCLE, 15' RAMP, 15' DWELL	1411	MAX5394L	-40C TO +125C (Condition G)	1000	CYS	80	0	TAPY5Q001REL
TEMP CYCLE, 5' RAMP, 10' DWELL	1415	MAX16936RATEA/V+CA	-65C TO +150C (Condition C)	500	CYS	80	0	TAQT1Q001AA
TEMP CYCLE, 5' RAMP, 10' DWELL	1424	MAX16990ATCD/V+	-65C TO +150C (Condition C)	500	CYS	80	0	TAQJ4Q001F#
TEMP CYCLE, 5' RAMP, 10' DWELL	1425	MAX16936RATE/V+CA	-65C TO +150C (Condition C)	500	CYS	80	0	TAQT1Q003BA
TEMP CYCLE, 5' RAMP, 10' DWELL	1426	MAX14778ETP+	-65C TO +150C (Condition C)	500	CYS	80	0	TAMB8Z001B
TEMP CYCLE, 5' RAMP, 10' DWELL	1426	MAX16936RATEA/V+CA	-65C TO +150C (Condition C)	500	CYS	80	0	TAQT1Q001BA
TEMP CYCLE, 5' RAMP, 10' DWELL	1427	MAX14921ECS+	-65C TO +150C (Condition C)	500	CYS	80	0	TATS4Z001E#
Total:							0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
BIASED MOISTURE	1327	MAX17491GTA+	130C, 85% R.H.	100	HRS	32	0	TALM4Z001C
BIASED MOISTURE	1330	MAX16840ATB+	130C, 85% R.H.	100	HRS	38	0	TAMC4U004H
BIASED MOISTURE	1331	MAX14562ETA+	130C, 85% R.H.	100	HRS	80	0	TALN4Z003A
BIASED MOISTURE	1334	MAX5704AUB+	130C, 85% R.H.	100	HRS	80	0	TAMB0Z001BC
BIASED MOISTURE	1346	MAX17491GTA+	130C, 85% R.H.	100	HRS	32	0	TALM4U003A
BIASED MOISTURE	1410	MAX5394L	85/85, 5.5 VOLTS	1000	HRS	80	0	TAPYQ003REL
BIASED MOISTURE	1410	MAX5394L	85/85, 5.5 VOLTS	1000	HRS	80	0	TAPYQ002REL
BIASED MOISTURE	1411	MAX5394L	85/85, 5.5 VOLTS	1000	HRS	80	0	TAPY5Q001REL
BIASED MOISTURE	1425	MAX16936RATE/V+CA	130C, 85% R.H.	96	HRS	76	0	TAQT1Q003BA
BIASED MOISTURE	1426	MAX14778ETP+	130C, 85% R.H.	100	HRS	79	0	TAMB8Z001B
BIASED MOISTURE	1426	MAX16936RATEA/V+CA	130C, 85% R.H.	96	HRS	76	0	TAQT1Q001BA
Total:							0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
MOISTURE SOAK	1327	MAX17491GTA+	130C, 85% R.H.	100	HRS	80	0	TALM4Z001C

MOISTURE SOAK	1331	MAX14562ETA+	130C, 85% R.H.	100	HRS	80	0	TALN4Z003A
HAST, NO BIAS	1410	MAX5394L	130C, 85% R.H.	264	HRS	80	0	TAPYQ003REL
HAST, NO BIAS	1410	MAX5394L	130C, 85% R.H.	264	HRS	80	0	TAPYQ002REL
HAST, NO BIAS	1411	MAX5394L	130C, 85% R.H.	264	HRS	80	0	TAPY5Q001REL
MOISTURE SOAK	1415	MAX16936RATEA/V+CA	130C, 85% R.H.	100	HRS	80	0	TAQT1Q001AA
MOISTURE SOAK	1424	MAX16990ATCD/V+	130C, 85% R.H.	100	HRS	80	0	TAQJ4Q001F#
MOISTURE SOAK	1425	MAX16936RATE/V+CA	130C, 85% R.H.	96	HRS	80	0	TAQT1Q003BA
MOISTURE SOAK	1426	MAX14778ETP+	130C, 85% R.H.	100	HRS	80	0	TAMB8Z001B
MOISTURE SOAK	1426	MAX16936RATEA/V+CA	130C, 85% R.H.	96	HRS	80	0	TAQT1Q001BA

Total: 0

FAILURE RATE: **MTTF (YRS): 152865** **QUANTITY: 1404** **FAILS: 0** **FITS: 0.7**