



4/17/2012

**RELIABILITY MONITOR REPORT
FOR**

San Antonio 0.5 μ m Silicon Gate CMOS (E35)

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:

DS28E01	DS3231M	DS3640
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The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 1015 QUANTITY: 45 FAILS: 0 FITS: 1124

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 4/1/2011 and 3/31/2012 .

Process Information:

Process Description: San Antonio 0.5µm Silicon Gate CMOS (E35)

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	1108	DS3640	125C, 3.6V (PSA) & 3.9V (PSB)	192 HRS	45	0	ZX148848AA-NPI
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	1118	DS3231M	150C	1000 HRS	77	0	ZX162670AD-Q1
STORAGE LIFE	1118	DS3231M	150C	1000 HRS	77	0	ZX162670AD-Q2
STORAGE LIFE	1118	DS3231M	150C	1000 HRS	77	0	ZX162670AD-Q3
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
BOND STRENGTH	1118	DS3231M	MIL-STD-883-2011 : COND D (IPC-TM-650_2.4.42.3)	40 WIRES	67	0	ZX162670AD-Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	1118	DS3231M	-55C TO 125C	1000 CYS	77	0	ZX162670AD-Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	1118	DS3231M	-55C TO 125C	1000 CYS	77	0	ZX162670AD-Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1118	DS3231M	-55C TO 125C	1000 CYS	77	0	ZX162670AD-Q2
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
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HAST	1118	DS3231M	130C, 85%R.H.,5.5V	192	HRS	77	0	ZX162670AD-Q1
HAST	1118	DS3231M	130C, 85%R.H.,5.5V	192	HRS	77	0	ZX162670AD-Q2
HAST	1118	DS3231M	130C, 85%R.H.,5.5V	96	HRS	77	0	ZX162670AD-Q3
Total:							0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
HAST, NO BIAS	1118	DS3231M	130C, 85% R.H.	96	HRS	77	0	ZX162670AD-Q1
HAST, NO BIAS	1118	DS3231M	130C, 85% R.H.	96	HRS	77	0	ZX162670AD-Q2
HAST, NO BIAS	1118	DS3231M	130C, 85% R.H.	96	HRS	77	0	ZX162670AD-Q3
Total:							0	

W/E ENDURANCE AND DATA RET'N

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
WRITE CYCLE STRESS (KCYS)	1127	DS28E01	85 C, 5.25 VOLTS	50	KCYS	77	0	ZJ167893AB
STORAGE LIFE	1127	DS28E01	150C	1000	HRS	77	0	ZJ167893AB
WRITE CYCLE STRESS (KCYS)	1127	DS28E01	25 C, 5.25 VOLTS	200	KCYS	77	0	ZJ167893AB
STORAGE LIFE	1127	DS28E01	150C	1000	HRS	75	0	ZJ167893AB
Total:							0	

FAILURE RATE: MTTF (YRS): 1015 QUANTITY: 45 FAILS: 0 FITS: 112.4