



4/20/2008

RELIABILITY MONITOR REPORT  
FOR

**DAL 0.8 $\mu$ m Silicon Gate CMOS**

**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:

DS1254	DS1410	DS17885	DS1803	DS1814
DS1844	DS2434	DS38452	DS75	MAX9018BEKA

The calculated failure rate for devices using this process is:

**FAILURE RATE:                    MTTF (YRS): 125016                    FITS: 0.9**

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 4/1/2007 and 3/31/2008 .

---

**Process Information:**

Process Description:                    DAL 0.8µm Silicon Gate CMOS

---

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE		MAX9018BEKA+	135C, 5.25V	1000 HRS	32	0	
			135C, 5.25V	1000 HRS	48	0	
HIGH TEMP OP LIFE	0646	DS75	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0652	DS17885	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0714	DS75	125C, 5.5 VOLTS	1000 HRS	77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0719	DS1803	125C, 5.25 VOLTS	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		75	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		76	0	
HIGH TEMP OP LIFE			125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0720	DS1844	125C, 5.5 VOLTS	1000 HRS	54	0	
HIGH TEMP OP LIFE	0720	DS1844	125C, 5.5 VOLTS	1000 HRS	54	0	
HIGH TEMP OP LIFE	0720	DS1844	125C, 5.5 VOLTS	1000 HRS	54	0	
HIGH TEMP OP LIFE	0742	DS2434	125C, 6.4 VOLTS	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
HIGH TEMP OP LIFE	0742	DS2434	125C, 6.4 VOLTS	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM		77	0	
HIGH TEMP OP LIFE			125C, 6.4 VOLTS	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

---

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0714	DS75	150C	1000 HRS	77	0	
STORAGE LIFE	0717	DS1410	85 C	1000 HRS	49	0	
STORAGE LIFE	0717	DS1254	70 C	1000 HRS	77	0	
STORAGE LIFE	0717	DS38452	85 C	1000 HRS	77	0	
STORAGE LIFE	0717	DS1410	85 C	1000 HRS	77	0	
STORAGE LIFE	0719	DS1803	150C	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
STORAGE LIFE	0719	DS1803	150C	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		76	0	
STORAGE LIFE			150C	1000 HRS	77	0	
STORAGE LIFE	0720	DS1844	150C	1000 HRS	77	0	
STORAGE LIFE	0720	DS1844	150C	1000 HRS	77	0	
STORAGE LIFE	0720	DS1844	150C	1000 HRS	77	0	
STORAGE LIFE	0722	DS1814	150C	1000 HRS	77	0	
STORAGE LIFE	0722	DS1814	150C	1000 HRS	77	0	
VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM		77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM		77	0	
STORAGE LIFE			150C	1000 HRS	77	0	
STORAGE LIFE	0742	DS2434	150C	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		77	0	
<b>Total:</b>						<b>0</b>	

---

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	0714	DS75	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0717	DS1410	-40 TO 85C	1000 CYS	50	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0717	DS1254	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0717	DS1254	0C TO 70C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0717	DS38452	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	0717	DS1410	-40 TO 85C	1000 CYS	77	0	
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0	

TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM		77	0
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0719	DS1803	-55C TO 125C	1000 CYS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0719	DS1803	-55C TO 125C	1000 CYS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0720	DS1844	-55C TO 125C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0720	DS1844	-55C TO 125C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0720	DS1844	-55C TO 125C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0722	DS1814	-55C TO 125C	1000 CYS	77	0
TEMP CYCLE, 5' RAMP, 10' DWELL	0722	DS1814	-55C TO 125C	1000 CYS	77	0
VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM		77	0
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0
VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM		77	0
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0
VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM		77	0
TEMP CYCLE, 5' RAMP, 10' DWELL			-55C TO 125C	1000 CYS	77	0
<b>Total:</b>						<b>0</b>

---

### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE	TEST	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
	CODE	VEHICLE					
HAST	0714	DS75	130C, 85%R.H.,5.5V	96	HRS	77	0
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM			42	0
BIASED MOISTURE			85/85, 5.5 VOLTS	1000	HRS	42	0
BIASED MOISTURE	0719	DS1803	85/85, 5.5 VOLTS	1000	HRS	43	0
VISUAL INSPECTION			WHISKERS < 50uM			43	0
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM			43	0
BIASED MOISTURE			85/85, 5.5 VOLTS	1000	HRS	43	0
VISUAL INSPECTION	0719	DS1803	WHISKERS < 50uM			41	0
BIASED MOISTURE			85/85, 5.5 VOLTS	1000	HRS	42	0
BIASED MOISTURE	0720	DS1844	85/85, 5.5 VOLTS	1000	HRS	77	0
BIASED MOISTURE	0720	DS1844	85/85, 5.5 VOLTS	1000	HRS	77	0
BIASED MOISTURE	0720	DS1844	85/85, 5.5 VOLTS	1000	HRS	77	0
VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM			77	0
HAST			130C, 85%R.H.,5.5V	96	HRS	77	0

VISUAL INSPECTION	0742	DS2434	WHISKERS < 50uM			77	0
HAST			130C, 85%R.H.,5.5V	96	HRS	77	0
HAST	0742	DS2434	130C, 85%R.H.,5.5V	96	HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM			77	0
<b>Total:</b>						<b>0</b>	<b>0</b>

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0717	DS1410	60C/90% R.H.	1000 HRS	49	0	
MOISTURE SOAK	0717	DS1254	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0717	DS38452	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0717	DS1410	60C/90% R.H.	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	<b>0</b>

**FAILURE RATE:                    MTTF (YRS): 125016                    FITS: 0.9**