

**RELIABILITY MONITOR REPORT
FOR**

0.35 μ m Process 8"

Dallas Semiconductor

**4401 South Beltwood Parkway
Dallas, TX 75244-3292**

**This Report was prepared by
Dallas Semiconductor Reliability Engineering**

Summary:

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor. The products covered by this process monitor are:

DS1080L	DS1081L	DS1088L	DS1099	DS1388
DS1863	DS1864	DS1865	DS2155	DS2156
DS2431	DS2460	DS2703	DS2704	DS2704R
DS2705	DS2745	DS2746	DS2756	DS2780
DS2781	DS2782	DS2784	DS2786	DS2790
DS28CM00	DS28CN01	DS28CZ04	DS28DG02	DS28E01
DS28E04	DS28EC20	DS3600	DS3610	DS3640
DS3641	DS3650	DS3881	DS3882	DS3908
DS3984	DS3988	DS3992	DS3994	DS4026
DS4026C	DS4303	DS4305	DS4420	DS600
DS620	DS75HV	DS75LV	DS75LX	DSQ3301-K02+T
MAXQ3210	MAXQ3212			

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 182366** **FITS: 0.6**

The parameters used to calculate this failure rate are as follows:

Cf: 60% **Ea: 0.7** **Tu: 25 °C**

The reliability data follows. At the start of this data is the process information. The next section is the detailed reliability data for each stress. The reliability data section includes the latest data available. This report covers data between 7/1/2006 and 6/30/2007 .

Device Information:

Process: 0.35µm Process 8"
Interconnect: Aluminum / 1% Silicon / 0.5% Copper
Gate Oxide Thickness: 120 Å

DATA RETENTION

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0617	DS3600	150C	1000 HRS	77	0	
STORAGE LIFE	0629	DS2745	150C	1000 HRS	77	0	
Total:						0	

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0617	DS4420	125C, 5.5 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0617	DS3600	125C, 3.6 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0620	DS28CZ04	125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0622	DS3882	125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0624	DS28CM00	125C, 5.25 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0626	DS1863	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0627	DS2431	125C, 5.25 VOLTS	1000 HRS	77	0	

HIGH TEMP OP LIFE	0629	DS2745	125C, 5.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0629	DS620	125C, 3.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0629	DS2431	125C, 5.25 VOLTS	1000 HRS	76	0
HIGH TEMP OP LIFE	0632	DS2431	125C, 5.25 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0632	DS3640	125C, 3.6V (PSA) & 3.9V (PSB)	1000 HRS	45	0
HIGH TEMP OP LIFE	0637	DS2431	125C, 5.25 VOLTS	1000 HRS	77	0
HIGH TEMP REVERSE BIAS	0639	DS2431	125C, 5.25 VOLTS	1000 HRS	80	0
HIGH TEMP REVERSE BIAS	0639	DS2431	125C, 5.25 VOLTS	1000 HRS	80	0
HIGH TEMP OP LIFE	0640	DS2756	125C, 5.5 VOLTS	1000 HRS	45	0
HIGH TEMP OP LIFE	0642	DS3988	125C, 5.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0651	DS3641	125C, 3.6 VOLTS	1000 HRS	45	0
HIGH TEMP OP LIFE	0702	DS2431	125C, 5.25 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0705	DS28DG02	125C, 3.6 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0708	DS2431	125C, 5.25 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0713	DS3994	125C, 5.5 VOLTS	1000 HRS	77	0
HIGH TEMP OP LIFE	0713	DS75LX	125C, 3.7 VOLTS	1000 HRS	45	0
Total:						0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0632	DS3640	150C	1000 HRS	77	0	
STORAGE LIFE	0651	DS3641	150C	1000 HRS	77	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0627	DS2431	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE	0629	DS2745	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE	0629	DS2431	-55C TO 125C	1000 CYS	76	0	
TEMP CYCLE	0632	DS2431	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE	0637	DS2431	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE, SLOW	0639	DS2431	-40C TO +125C	1000 CYS	80	0	
TEMP CYCLE, SLOW	0639	DS2431	-40C TO +125C	1500 CYS	80	0	
TEMP CYCLE	0702	DS2431	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE	0708	DS2431	-55C TO 125C	1000 CYS	77	0	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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HAST	0627	DS2431	130C, 85%R.H.,5.5V	96	HRS	77	0
HAST	0629	DS2745	130C, 85%R.H.,5.5V	96	HRS	76	0
HAST	0629	DS2431	130C, 85%R.H.,5.5V	96	HRS	76	0
HAST	0632	DS2431	130C, 85%R.H.,5.5V	96	HRS	77	0
HAST	0637	DS2431	130C, 85%R.H.,5.5V	96	HRS	77	0
BIASED MOISTURE	0639	DS2431	85/85, 5.5 VOLTS	1000	HRS	80	0
BIASED MOISTURE	0639	DS2431	85/85, 5.5 VOLTS	1000	HRS	80	0
HAST	0708	DS2431	130C, 85%R.H.,5.5V	96	HRS	77	0
Total:							0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0627	DS2431	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0
AUTOCLAVE	0629	DS2745	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0
AUTOCLAVE	0629	DS2431	121C, 2 ATM STEAM, UNBIASED	168	HRS	76	0
AUTOCLAVE	0632	DS2431	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0
Total:							0

W/E ENDURANCE AND DATA RET'N

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
WRITE CYCLE STRESS (KCYS)	0620	DS28CZ04	85 C, 5.25 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0622	DS3882	85 C, 5.25 VOLTS	30	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0626	DS1863	85 C, 5.5 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0627	DS2431	85 C, 5.25 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0629	DS620	85 C, 3.5 VOLTS	10	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0629	DS620	25 C, 3.5 VOLTS	40	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0629	DS2431	85 C, 5.25 VOLTS	50	KCYS	76	0
STORAGE LIFE			150C	1000	HRS	76	0
WRITE CYCLE STRESS (KCYS)	0632	DS2431	85 C, 5.25 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0637	DS2431	85 C, 5.25 VOLTS	50	KCYS	77	0

STORAGE LIFE	0637	DS2431	150C	1000	HRS	76	0
WRITE CYCLE STRESS (KCYS)	0637	DS2431	25 C, 5.25 VOLTS	200	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0640	DS2756	70 C, 5.5 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0642	DS3988	70 C, 5.5 VOLTS	30	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0705	DS28DG02	25 C, 3.6 VOLTS	200	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0708	DS2431	85 C, 5.25 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0708	DS2431	25 C, 5.25 VOLTS	200	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0713	DS3994	70 C, 5.5 VOLTS	30	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
						Total:	0

FAILURE RATE:

MTTF (YRS): 182366

FITS: 0.6