

**RELIABILITY MONITOR REPORT
FOR**

0.35 μm 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:

DS1088L	DS1099	DS1388	DS1863	DS1864
DS2431	DS2460	DS2703	DS2704	DS2705
DS2745	DS2746	DS2756	DS2780	DS2781
DS2782	DS2790	DS28CM00	DS28CZ04	DS28E01
DS28E04	DS3600	DS3610	DS3640	DS3881
DS3882	DS3908	DS3984	DS3988	DS3992
DS3994	DS4026C	DS4303	DS4305	DS4420
DS600	DS620	DS75HV	DS75LV	DSQ3301-K02+T

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 152990** **FITS: 0.7**

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

Cf: 60% **Ea: 0.7** **B: 0** **Tu: 25 °C** **Vu: 5.5 Volts**

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 10/1/2005 and 9/30/2006.

Device Information:

Process: 0.35 µm 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	0536	DS2781	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0541	DS1388	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0543	DS3610	125C, 3.6 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0547	DS2431	125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0601	DS3908	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0602	DS2705	125C, 5.5 V (PSA) & 0.0 V (PSB)	1000 HRS	77	0	
HIGH TEMP OP LIFE	0604	DS3988	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0606	DS75LV	125C, 3.7 VOLTS	1000 HRS	77	0	
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	0618	DS2746	125C, 5.5 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	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
Total:						0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0543	DS3610	150C	1000 HRS	77	0	
STORAGE LIFE	0618	DS2746	150C	1000 HRS	77	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0547	DS2431	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE	0604	DS3988	-55C TO 125C	1000 CYS	77	0	
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	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST	0547	DS2431	130C, 85%R.H.,5.5V	96 HRS	72	0	
HAST	0604	DS3988	130C, 85%R.H.,5.5V	96 HRS	72	0	
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	
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0547	DS2431	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	

HAST, NO BIAS	0604	DS3988	130C, 85% R.H.	200	HRS	77	0
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)	0536	DS2781	50 C, 5.5 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0541	DS1388	85 C, 5.5 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0547	DS2431	85 C, 5.25 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0601	DS3908	70 C, 5.5 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	76	0
WRITE CYCLE STRESS (KCYS)	0602	DS2705	85 C, 5.5 V (PSA) & 15.0 V (PSB)	1	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0604	DS3988	70 C, 5.5 VOLTS	30	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
WRITE CYCLE STRESS (KCYS)	0604	DS3988	85 C, 5.5 VOLTS	50	KCYS	77	0
STORAGE LIFE			150C	1000	HRS	77	0
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)	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	0632 DS2431 150C	1000 HRS	77	0
		Total:		0

FAILURE RATE: **MTTF (YRS): 152990** **FITS: 0.7**