

**RELIABILITY MONITOR REPORT
FOR**

0.8 μm Process

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:

DS1023	DS1033	DS1035	DS1044	DS1065
DS1073	DS1075	DS1175	DS1231	DS1232
DS1233	DS1302	DS1305	DS1306	DS1307
DS1308	DS1312	DS1314	DS1315	DS1321
DS1323	DS13D12	DS13D14	DS13D21	DS1481
DS1620	DS1621	DS1623	DS1624	DS1629
DS1670	DS1671	DS1673	DS1674	DS1677
DS1680	DS1685	DS1705	DS1706	DS1707
DS1708	DS1720	DS1721	DS17285	DS17485
DS1780	DS17885	DS1800	DS1801	DS1802
DS1803	DS1804	DS1806	DS1807	DS1810
DS1811	DS1812	DS1813	DS1814	DS1815
DS1816	DS1817	DS1818	DS1819	DS1821
DS1832	DS1834	DS1836	DS1844	DS1866
DS1868	DS2105	DS2106	DS2109	DS2110
DS2114	DS2118M	DS21372	DS2151	DS2152
DS2153	DS2154	DS2172	DS21Q41	DS21S07
DS21T05	DS21T06	DS21T07	DS21T11	DS2401
DS2406	DS2407	DS2423	DS2430	DS2434
DS2435	DS2436	DS2480	DS24S03	DS24S34
DS2502	DS2503	DS2505	DS2506	DS32KHZ
DS4201	DS56	DS60	DS75	DS76KHZ
DS80C310	DS80CH10	DS83C520	DS87C520	DS87C530

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 24932** **FITS: 4.6**

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 07/01/2003 and 06/30/2004 .

Device Information:

Process: 0.8 µm Process
Interconnect: Aluminum / 1% Silicon / 0.5% Copper
Gate Oxide Thickness: 175 Å

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0247	DS1621	125C, 5.5 VOLTS	1000 HRS		0	
HIGH TEMP OP LIFE	0326	DS1621	125C, 5.5 VOLTS	1000 HRS		1	30020537
HIGH TEMP OP LIFE	0327	DS1232	125C, 5.5 VOLTS	1000 HRS		0	
HIGH TEMP OP LIFE	0336	DS1307	125C, 5.5 VOLTS	1000 HRS		0	
HIGH TEMP OP LIFE	0347	DS87C520	125C, 5.5 VOLTS	12 HRS		0	

HIGH TEMP OP LIFE	0347	DS87C520	125C, 5.5 VOLTS	988	HRS	0
HIGH TEMP OP LIFE	0347	DS87C520	125C, 5.5 VOLTS	12	HRS	0
HIGH TEMP OP LIFE	0410	DS32KHZ	125C, 5.5 VOLTS	1000	HRS	0
				Total:		1

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0247	DS1621	150C	1000	HRS	0	
STORAGE LIFE	0326	DS1621	150C	1000	HRS	0	
STORAGE LIFE	0347	DS87C520	150C	1000	HRS	0	
STORAGE LIFE	0410	DS32KHZ	125C	1000	HRS	0	
				Total:		0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0247	DS1621	-55C TO 125C	1000	CYS	0	
TEMP CYCLE	0326	DS1621	-55C TO 125C	1000	CYS	1	30018138
TEMP CYCLE	0327	DS1232	-55C TO 125C	1000	CYS	0	
TEMP CYCLE	0410	DS32KHZ	-40 TO 85C	1000	CYS	0	
				Total:		1	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0247	DS1621	85/85, 5.5 VOLTS	1000	HRS	0	
BIASED MOISTURE	0326	DS1621	85/85, 5.5 VOLTS	1000	HRS	0	
HAST	0327	DS1232	130C, 85%R.H.,5.5V	96	HRS	0	
BIASED MOISTURE	0410	DS32KHZ	85/85, 5.5 VOLTS	1000	HRS	5	30023098
				Total:		5	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0327	DS1232	121C, 2 ATM STEAM, UNBIASED	168	HRS	0	
AUTOCLAVE	0410	DS32KHZ	121C, 2 ATM STEAM, UNBIASED	168	HRS	0	
				Total:		0	

WRITE CYCLE STRESS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
WRITE CYCLE STRESS	0247	DS1621	85 C, 5.5 VOLTS	50	KCYS	0	
WRITE CYCLE STRESS	0326	DS1621	85 C, 5.5 VOLTS	50	KCYS	0	
				Total:		0	

FAILURE RATE:

MTTF (YRS): 24932

FITS: 4.6