

**RELIABILITY MONITOR REPORT  
FOR**

**2.0  $\mu\text{m}$  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:

DS1005	DS1007	DS1010	DS1013	DS1200
DS1236	DS1238	DS1239	DS1259	DS1283
DS1284	DS2175	DS2176	DS2180A	DS2181A
DS2182	DS2186	DS2187	DS2188	DS5000

The calculated failure rate for devices using this process is:

**FAILURE RATE:**                      **MTTF (YRS): 18096**                      **FITS: 6.3**

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:                                      2.0 µm Process  
 Interconnect:                              Aluminum / 1% Silicon / 0.5% Copper  
 Gate Oxide Thickness:                      250 Å

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0327	DS1005	125C, 5.5 VOLTS	1000 HRS		0	
HIGH TEMP OP LIFE	0328	DS1005	125C, 5.5 VOLTS	1000 HRS		0	
				<b>Total:</b>		<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0327	DS1005	150C	1000 HRS		0	
STORAGE LIFE	0328	DS1005	150C	1000 HRS		0	
				<b>Total:</b>		<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0327	DS1005	-55C TO 125C	1000 CYS		0	
TEMP CYCLE	0328	DS1005	-55C TO 125C	1000 CYS		0	
				<b>Total:</b>		<b>0</b>	

**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST	0327	DS1005	130C, 85%R.H.,5.5V	96 HRS		0	
HAST	0328	DS1005	130C, 85%R.H.,5.5V	96 HRS		0	

**Total: 0**

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**UNBIASED MOISTURE RESISTANCE**

<b>DESCRIPTION</b>	<b>DATE CODE</b>	<b>TEST VEHICLE</b>	<b>CONDITION</b>	<b>READPOINT</b>	<b>QUANTITY</b>	<b>FAILS</b>	<b>FA NO</b>
AUTOCLAVE	0327	DS1005	121C, 2 ATM STEAM, UNBIASED	168	HRS	0	
AUTOCLAVE	0328	DS1005	121C, 2 ATM STEAM, UNBIASED	168	HRS	0	
					<b>Total:</b>	<b>0</b>	

**FAILURE RATE: MTTF (YRS): 18096 FITS: 6.3**