

**RELIABILITY MONITOR REPORT  
FOR**

**TSMC 0.18 $\mu$ 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 specific products in this process monitor are:

DS3100	DS32504	DS32512	DS33X162
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The calculated failure rate for devices using this process is:

**FAILURE RATE:**                      **MTTF (YRS): 26791**                      **FITS: 4.3**

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 10/1/2006 and 9/30/2007 .

**Device Information:**

Process: TSMC 0.18µm Process  
 Interconnect: Aluminum / 1% Silicon / 0.5% Copper  
 Gate Oxide Thickness: TBD

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0625	DS32512	125C, 2.0V (PSA) & 3.5V (PSB)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0642	DS32504	125C, 2.0V (PSA) & 3.5V (PSB)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0649	DS33X162	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0705	DS3100	125C, 3.5V (PSA) & 2.0V (PSB)	1000 HRS	48	0	
HIGH TEMP OP LIFE	0708	DS32512	125C, 2.0V (PSA) & 3.5V (PSB)	1000 HRS	45	0	
<b>Total:</b>						<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0625	DS32512	150C	1000 HRS	76	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0625	DS32512	-55C TO 125C	1000 CYS	77	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0625	DS32512	85/85, 2.0 VOLTS	1000 HRS	45	0	
<b>Total:</b>						<b>0</b>	

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