

RELIABILITY MONITOR REPORT  
FOR

**0.35  $\mu\text{m}$  Chartered 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:

DS21455	DS21458	DS2155	DS2156	DS2174
DS2194	DS21Q42	DS21Q44	DS26101	DS26102
DS26401	DS26502	DS26503	DS26528	DS3112
DS31256	DS3131	DS3134	DS3141	DS31412
DS3142	DS3143	DS3144	DS3146	DS3148
DS3150	DS3151	DS3152	DS3153	DS3154
DS3160	DS3164	DS3170	DS3184	

The calculated failure rate for devices using this process is:

**FAILURE RATE:                      MTTF (YRS): 10575                      FITS: 10.8**

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 10/1/03 and 9/30/04.

**Device Information:**

Process: 0.35 µm Chartered Process  
 Interconnect: Aluminum / 1% Silicon / 0.5% Copper  
 Gate Oxide Thickness: 131 Å

**Device Information:**

Process: 0.35 µm Chartered Process  
 Interconnect: Aluminum / 1% Silicon / 0.5% Copper  
 Gate Oxide Thickness: 75 Å

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0403	DS3184	125C, 3.5 VOLTS	192 HRS	45	0	
			125C, 3.5 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0418	DS26502	125C, 3.5 VOLTS	192 HRS	45	0	
			125C, 3.5 VOLTS	1000 HRS	45	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0418	DS26502	-55C TO 125C	500 CYS	77	0	
			-55C TO 125C	1000 CYS	77	0	
<b>Total:</b>						<b>0</b>	

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0418	DS26502	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	

**FAILURE RATE:**

**MTTF (YRS): 10575**

**FITS: 10.8**

**Total:**

**0**