



05/02/2006

**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
DS26303	DS26324	DS26334	DS26401	DS26502
DS26503	DS26504	DS26521	DS26524	DS26528
DS26556	DS3112	DS31256	DS3131	DS3134
DS3141	DS3142	DS3143	DS3144	DS3150
DS3151	DS3152	DS3153	DS3154	DS3160
DS3170	DS3184	DS3251	DS3252	DS3253
DS3254				

The calculated failure rate for devices using this process is:

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 04/01/2005 and 03/31/2006 .

**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	0448	DS26334	125C, 3.5 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0518	DS21458	125C, 3.5 VOLTS	1000 HRS	45	0	
HIGH TEMP OP LIFE	0518	DS3144	125C, 3.5 VOLTS (PSA)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0520	DS26504	125C, 3.5 VOLTS	1000 HRS	44	0	
VISUAL INSPECTION			WHISKERS < 50µM		3	0	
HIGH TEMP OP LIFE	0527	DS3150	125C, 3.5 VOLTS	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50µM		3	0	
<b>Total:</b>						<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0518	DS21458	150C	1000 HRS	77	0	
STORAGE LIFE	0518	DS3144	150C	1000 HRS	77	0	
STORAGE LIFE	0520	DS26504	150C	1000 HRS	76	0	
VISUAL INSPECTION			WHISKERS < 50µM		3	0	
STORAGE LIFE	0527	DS3150	150C	1000 HRS	77	0	

VISUAL INSPECTION	0527	DS3150	WHISKERS < 50uM			3	0
<b>Total:</b>							<b>0</b>

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0518	DS21458	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE	0518	DS3144	-55C TO 125C	1000 CYS	77	0	
TEMP CYCLE	0520	DS26504	-55C TO 125C	1000 CYS	76	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
TEMP CYCLE	0527	DS3150	-55C TO 125C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
<b>Total:</b>							<b>0</b>

**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE CYCLING	0518	DS21458	85/85, 3.5 VOLTS	1000 HRS	45	0	
BIASED MOISTURE	0518	DS3144	85/85, 2.0 VOLTS	1000 HRS	45	0	
HAST	0520	DS26504	130C, 85%R.H.,3.5V	96 HRS	45	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
HAST	0527	DS3150	130C, 85%R.H.,3.5V	96 HRS	72	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
<b>Total:</b>							<b>0</b>

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST, NO BIAS	0520	DS26504	130C, 85% R.H.	200 HRS	76	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
HAST, NO BIAS	0527	DS3150	130C, 85% R.H.	200 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
<b>Total:</b>							<b>0</b>