

RELIABILITY MONITOR REPORT  
FOR

**LQFP Package**

**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 Package Reliability Monitor. The assemblies covered by this package monitor are:

ASSY SITE	PINS	PACKAGE		
ATK (Amkor, K)	100	LQFP	ATK (Amkor, K)	128 LQFP
ATK (Amkor, K)	64	LQFP	ATP (Amkor, PI)	100 LQFP
ATP (Amkor, PI)	128	LQFP	Stats	100 LQFP
Stats	128	LQFP	Stats	48 LQFP
Stats	64	LQFP		

The calculated failure rate for this assembly is:

**FAILURE RATE:                    MTTF (YRS): 41479                    FITS: 2.8**

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 a description of the assembly vehicle used to generate this reliability data. 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.

**Assembly Information:**

Package Type:                    LQFP 10 mm  
 Flammability:                    UL 94-V0  
 Moisture Sensitivity  
 (JEDEC J-STD20A)                    Level 4  
 Date Code Range:                    0403                    to 0403

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0403	DS80C390	125C, 5.5 VOLTS	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

**Assembly Information:**

Package Type:                    LQFP 14 mm  
 Flammability:                    UL 94-V0  
 Moisture Sensitivity  
 (JEDEC J-STD20A)                    Level 4  
 Date Code Range:                    0332                    to 0402

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0332	DS2154	125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0336	DS21354	125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH VOLTAGE LIFE	0402	DS80C400	125C, 5.5V (PSA) & 3.3V (PSB)	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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TEMP CYCLE	0336	DS21354	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE	0402	DS80C400	-55C TO 125C	1000	CYS	77	0
						<b>Total:</b>	<b>0</b>

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**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST	0336	DS21354	130C, 85%R.H.,3.5V	96	HRS	77	0
HAST	0402	DS80C400	130C, 85%R.H.,3.5V	96	HRS	77	0
						<b>Total:</b>	<b>0</b>

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**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HAST, NO BIAS	0336	DS21354	130C, 85% R.H.	200	HRS	77	0
HAST, NO BIAS	0402	DS80C400	130C, 85% R.H.	200	HRS	77	0
						<b>Total:</b>	<b>0</b>

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**Assembly Information:**

Package Type: LQFP 7 mm  
 Flammability: UL 94-V0  
 Moisture Sensitivity (JEDEC J-STD20A) Level 3  
 Date Code Range: 0320 to 0320

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**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0320	DS2127	125C, 5.5 VOLTS	1000	HRS	45	0
						<b>Total:</b>	<b>0</b>

**FAILURE RATE: MTTF (YRS): 41479 FITS: 2.8**