

RELIABILITY MONITOR REPORT  
FOR

**Flip Chip 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		
Dallas		Bump, 1 layer, glob	Dallas	Bump, 1 layer, no encap.
Dallas		Bump, 1 layer, underfill	Dallas	Bump, 2 layer, glob
Dallas		Bump, 2 layer, no encap.	Dallas	Bump, 2 layer, underfill
Dallas		Bump, 2 layer, underfill, resistor	Dallas	Bump, RDL layer, BCB Passivation
Dallas		Flip Chip, glob (RoHS)	Dallas	Flip Chip, no encap. (RoHS)
Dallas-8"		Bump, 1 layer, glob	Dallas-8"	Bump, 1 layer, no encap.
Dallas-8"		Bump, 1 layer, underfill	Dallas-8"	Bump, 2 layer, no encap.
Dallas-8"		Bump, 2 layer, underfill, resistor	Dallas-8"	Bump, RDL layer, BCB Passivation
Dallas-8"		Flip Chip, RDL, underfill, resistor (	Unitive	Bump, 1 layer, no encap.
Unitive		Bump, 1 layer, underfill		

Note: Due to the nature of the construction on this assembly, there is no operating life data collected.

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 10/1/2005 and 9/30/2006

**Assembly Information:**

Package Type: Flip Chip RDL (Solder Bump)  
 Flammability: UL 94-V0  
 Moisture Sensitivity (JEDEC J-STD20A) Level 1  
 Date Code Range: 0605 to 0639

**PRECONDITIONING LEVEL 1**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0639	DS2502	125C	24 HRS	231		
MOISTURE SOAK			85 C/85% R.H.	168 HRS	231		
CONVECTION REFLOW			235C +5/-0C	3 PASS	231	0	
STORAGE LIFE	0639	DS2502	125C	24 HRS	231		
MOISTURE SOAK			85 C/85% R.H.	168 HRS	231		
CONVECTION REFLOW			235C +5/-0C	3 PASS	231	0	
<b>Total:</b>						<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0639	DS2502	150C	1000 HRS	231	0	
STORAGE LIFE	0639	DS2502	150C	1000 HRS	231	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0605	DS2502	-40C TO +125C	1000 CYS	77	0	
TEMP CYCLE	0605	DS2502	-40C TO +125C	1000 CYS	77	0	

TEMP CYCLE	0605	DS2502	-40C TO +125C	1000 CYS	77	0
TEMP CYCLE	0605	DS2502	-40C TO +125C	1000 CYS	77	0
TEMP CYCLE	0605	DS2502	-40C TO +125C	1000 CYS	77	0
TEMP CYCLE	0605	DS2502	-40C TO +125C	1000 CYS	77	0
TEMP CYCLE	0607	DS2502	-40 TO 85C	1000 CYS	80	0
TEMP CYCLE	0607	DS2502	-40 TO 85C	1000 CYS	80	0
TEMP CYCLE	0607	DS2502	-40 TO 85C	1000 CYS	80	0
TEMP CYCLE	0607	DS2502	-40 TO 85C	1000 CYS	80	0
TEMP CYCLE	0607	DS2502	-40 TO 85C	1000 CYS	80	1
TEMP CYCLE	0607	DS2502	-40 TO 85C	1000 CYS	80	0
<b>Total:</b>						<b>1</b>

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**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0605	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0605	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0605	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0605	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0605	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0605	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0639	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	231	0	
<b>Total:</b>						<b>0</b>	