



04/27/2005

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)

The calculated failure rate for this assembly is:

FAILURE RATE: **MTTF (YRS): 35721** **FITS: 3.2**

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 04/01/2004 and 03/31/2005.

Assembly Information:

Package Type: Flip Chip (Solder Bump)
 Flammability: UL 94-V0
 Moisture Sensitivity
 (JEDEC J-STD20A) Level 1
 Date Code Range: 0414 to 0414

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0414	DS2502	-40 TO 85C	1000 CYS	80	1	30021606
TEMP CYCLE	0414	DS2502	-40 TO 85C	1000 CYS	80	0	
Total:						1	

Assembly Information:

Package Type: Flip Chip (Solder Bump) (RoHS)
 Flammability: UL 94-V0
 Moisture Sensitivity
 (JEDEC J-STD20A) Level 1
 Date Code Range: 0437 to 0437

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0437	DS2502	125C, 6.0 VOLTS	1000 HRS	80	0	
HIGH TEMP OP LIFE	0437	DS2502	125C, 6.0 VOLTS	1000 HRS	80	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
-------------	-----------	--------------	-----------	-----------	----------	-------	-------

STORAGE LIFE	0437	DS2502	125C	1000 HRS	80	0
STORAGE LIFE	0437	DS2502	125C	1000 HRS	80	0
Total:						0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0437	DS2502	-40 TO 85C	1000 CYS	80	0	
TEMP CYCLE	0437	DS2502	-40 TO 85C	1000 CYS	80	0	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0437	DS2502	85/85, 5.5 VOLTS	1000 HRS	80	0	
BIASED MOISTURE	0437	DS2502	85/85, 5.5 VOLTS	1000 HRS	80	0	
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0437	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	76	0	
AUTOCLAVE	0437	DS2502	121C, 2 ATM STEAM, UNBIASED	168 HRS	76	0	
Total:						0	

Assembly Information:

Package Type: Flip Chip RDL (Solder Bump)
 Flammability: UL 94-V0
 Moisture Sensitivity (JEDEC J-STD20A) Level 1
 Date Code Range: 0418 to 0418

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0418	DS2502	125C, 6.0 VOLTS	1000 HRS	48	0	
HIGH TEMP OP LIFE	0418	DS2502	125C, 6.0 VOLTS	1000 HRS	48	0	
HIGH TEMP OP LIFE	0418	DS2502	125C, 6.0 VOLTS	1000 HRS	48	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0418	DS2502	125C	1000 HRS	80	0	
STORAGE LIFE	0418	DS2502	125C	1000 HRS	80	0	
STORAGE LIFE	0418	DS2502	125C	1000 HRS	80	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0418	DS2502	-40 TO 85C	1000 CYS	80	0	

TEMP CYCLE	0418	DS2502	-40 TO 85C	1000 CYS	80	0
TEMP CYCLE	0418	DS2502	-40 TO 85C	1000 CYS	80	0
				Total:		0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0418	DS2502	85/85, 5.5 VOLTS	1000 HRS	80	0	
BIASED MOISTURE	0418	DS2502	85/85, 5.5 VOLTS	1000 HRS	80	0	
BIASED MOISTURE	0418	DS2502	85/85, 5.5 VOLTS	1000 HRS	80	0	
				Total:		0	

FAILURE RATE: **MTTF (YRS): 35721** **FITS: 3.2**