

RELIABILITY MONITOR REPORT
FOR

CSP 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-8"	4	CSP20, RDL	Dallas-8"	6 CSP20, RDL
Dallas-8"	6	CSP20, RDL (Hi Pb)	Dallas-8"	6 CSP20, RDL (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 18801 FITS: 6.1

The parameters used to calculate this failure rate are as follows:

Cf: 60% Ea: 0.7 Tu: 25 °C

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 4/1/2006 and 3/31/2007.

Assembly Information:

Package Type: CSP RDL (Solder Bump) 3x3 Ay x 0.71 mm DNP
 Flammability: UL 94-V0
 Moisture Sensitivity (JEDEC J-STD20A) Level 1
 Date Code Range: 0640 to 0642

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0640	DS2431	125C	24 HRS	231		
MOISTURE SOAK			85 C/85% R.H.	168 HRS	231		
CONVECTION REFLOW			235C +/-0C	3 PASS	231	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0642	DS2431	150C	1000 HRS	34	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, SLOW	0642	DS2431	-40C TO +125C	1000 CYS	80	0	
TEMP CYCLE, SLOW	0642	DS2431	-40C TO +125C	1000 CYS	80	0	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0642	DS2431	85/85, 5.5 VOLTS	1000 HRS	80	0	
BIASED MOISTURE	0642	DS2431	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	0640	DS2431	121C, 2 ATM STEAM, UNBIASED	168 HRS	231	0	
Total:						0	

Assembly Information:

Package Type: CSP RDL (Solder Bump) (Pb-Free) 3x3 Ay x 0.71 mm DNP
Flammability: UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A) Level 1
Date Code Range: 0634 to 0634

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0634	DS2431	-40C TO +125C	1500 CYS	80	0	
TEMP CYCLE, SLOW	0634	DS2431	-40C TO +125C	1500 CYS	80	0	
TEMP CYCLE	0634	DS2431	-40C TO +125C	1000 CYS	80	0	
TEMP CYCLE, SLOW	0634	DS2431	-40C TO +125C	1500 CYS	80	0	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0634	DS2431	85/85, 5.5 VOLTS	1000 HRS	80	0	
BIASED MOISTURE	0634	DS2431	85/85, 5.5 VOLTS	1000 HRS	80	0	
Total:						0	

Assembly Information:

Package Type: CSP20 (Hi-Pb) 3x3 Ay x 0.71 mm DNP
Flammability: UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A) Level 1
Date Code Range: 0638 to 0639

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP REVERSE BIAS	0639	DS2431	125C, 5.25 VOLTS	1000 HRS	80	0	
HIGH TEMP REVERSE BIAS	0639	DS2431	125C, 5.25 VOLTS	1000 HRS	80	0	
Total:						0	

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0638	DS2431	125C	24 HRS	154		
MOISTURE SOAK			85 C/85% R.H.	168 HRS	154		
CONVECTION REFLOW			235C +/-0C	3 PASS	154	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0638	DS2431	150C	1000 HRS	77	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, SLOW	0638	DS2431	-40C TO +125C	1000 CYS	77	0	
TEMP CYCLE, SLOW	0639	DS2431	-40C TO +125C	1000 CYS	80	0	
TEMP CYCLE, SLOW	0639	DS2431	-40C TO +125C	1500 CYS	80	0	
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0639	DS2431	85/85, 5.5 VOLTS	1000 HRS	80	0	
BIASED MOISTURE	0639	DS2431	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	0638	DS2431	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
Total:						0	

FAILURE RATE: MTTF (YRS): 18801 FITS: 6.1