1/20/07

RELIABILITY MONITOR REPORT
FOR

PLCC 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)	32	PLCC	ATK (Amkor, K)	68	PLCC
ATP (Amkor, PI)	28	PLCC	ATP (Amkor, PI)	32	PLCC
ATP (Amkor, PI)	44	PLCC	ATP (Amkor, PI)	52	PLCC
ATP (Amkor, PI)	68	PLCC	ATP (Amkor, PI)	28	PLCC (Pb-Free)
ATP (Amkor, PI)	44	PLCC (Pb-Free)	ATP (Amkor, PI)	52	PLCC (Pb-Free)
ATP (Amkor, PI)	68	PLCC (Pb-Free)	OSEP	28	PLCC
OSEP	44	PLCC	OSEP	52	PLCC
OSEP	44	PLCC (Pb-Free)			

The calculated failure rate for this assembly is:

FAILURE RATE: **MTTF (YRS): 32431** **FITS: 3.5**

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. A 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 1/1/2006 and 12/31/2006 .

Assembly Information:

Package Type:	PLCC 650x650x3.87
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	Level 3
Date Code Range:	0642 to 0642

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0642	DS87C520	125C, 5.5 VOLTS	1000	HRS	77	0	
					Total:		**0**	

PRECONDITIONING LEVEL 3

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0642	DS87C520	125C	24	HRS	229		
MOISTURE SOAK			30C/60% R.H.	192	HRS	229		
CONVECTION REFLOW			220C +5/-0C	3	PASS	229	0	
					Total:		**0**	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0642	DS87C520	150C	1000	HRS	77	0	
					Total:		**0**	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO

TEMP CYCLE	0642	DS87C520	-55C TO 125C	1000	CYS	77	0	
					Total:		**0**	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HAST	0642	DS87C520	130C, 85%R.H.,5.5V	96	HRS	77	0	
					Total:		**0**	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
AUTOCLAVE	0642	DS87C520	121C, 2 ATM STEAM, UNBIASED	168	HRS	75	0	
					Total:		**0**	

Assembly Information:

Package Type:	PLCC (Pb-Free) 750x750x3.87
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	Level 4
Date Code Range:	0609 to 0609

MOISTURE SENSITIVITY LEVEL 4

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
ULTRASOUND	0609	DS87C530	J-STD-020			8	0	
STORAGE LIFE			125C	48	HRS	8		
MOISTURE SOAK			30C/60% R.H.	96	HRS	8		
CONVECTION REFLOW			260C +0/-5C	3	PASS	8	0	
EXTERNAL VISUAL			J-STD-020, 6.1a			8	0	
PRECONDITION U/S			J-STD-020			8	0	
					Total:		**0**	

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0609	DS87C530	125C, 5.5 VOLTS	1000	HRS	77	0	
					Total:		**0**	

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
SOLDERABILITY (Sn/Pb)	0609	DS87C530	JESD22-B102, COND C			3	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C			3	0	
X-RAY	0609	DS87C530	MIL-STD-883-2012 : TOP & SIDE VIEW			6	0	
PHYSICAL DIMENSIONS			JESD22-B100			6	0	
MARK PERMANENCY			JESD22-B107			6	0	
LEAD INTEGRITY			JESD22-B105, COND B			6	0	
					Total:		**0**	

PRECONDITIONING LEVEL 4

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0609	DS87C530	125C	48	HRS	385		
MOISTURE SOAK			30C/60% R.H.	96	HRS	385		

CONVECTION REFLOW	0609	DS87C530	260C +0/-5C	3	PASS	385	0	
					Total:		**0**	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0609	DS87C530	150C	1000	HRS	77	0	
					Total:		**0**	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
TEMP CYCLE	0609	DS87C530	-55C TO 125C	1000	CYS	77	0	
					Total:		**0**	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HAST, NO BIAS	0609	DS87C530	130C, 85% R.H.	200	HRS	77	0	
AUTOCLAVE	0609	DS87C530	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0	
					Total:		**0**	

Assembly Information:

Package Type:	PLCC (Pb-Free) 950x950x3.87
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	Level 4
Date Code Range:	0602 to 0617

MOISTURE SENSITIVITY LEVEL 4

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
ULTRASOUND	0602	DS87C550	J-STD-020			8	0	
STORAGE LIFE			125C	48	HRS	8		
MOISTURE SOAK			30C/60% R.H.	96	HRS	8		
CONVECTION REFLOW			260C +0/-5C	3	PASS	8	0	
EXTERNAL VISUAL			J-STD-020, 6.1a			8	0	
PRECONDITION U/S			J-STD-020			8	0	
ULTRASOUND	0617	DS87C550	J-STD-020			8	0	
STORAGE LIFE			125C	48	HRS	8		
MOISTURE SOAK			30C/60% R.H.	96	HRS	8		
CONVECTION REFLOW			260C +0/-5C	3	PASS	8	0	
EXTERNAL VISUAL			J-STD-020, 6.1a			8	0	
PRECONDITION U/S			J-STD-020			8	0	
					Total:		**0**	

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0602	DS87C550	125C, 5.5 VOLTS	1000	HRS	77	0	
HIGH TEMP OP LIFE	0617	DS87C550	125C, 5.5 VOLTS	1000	HRS	45	0	
					Total:		**0**	

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
SOLDERABILITY (Sn/Pb)	0602	DS87C550	JESD22-B102, COND C		3	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C		3	0	
X-RAY	0602	DS87C550	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
PHYSICAL DIMENSIONS			JESD22-B100		6	0	
MARK PERMANENCY			JESD22-B107		6	0	
LEAD INTEGRITY			JESD22-B105, COND B		6	0	
SOLDERABILITY (Sn/Pb)	0617	DS87C550	JESD22-B102, COND C		3	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C		3	0	
X-RAY	0617	DS87C550	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
PHYSICAL DIMENSIONS			JESD22-B100		6	0	
MARK PERMANENCY			JESD22-B107		6	0	
LEAD INTEGRITY			JESD22-B105, COND B		6	0	
				Total:		**0**	

PRECONDITIONING LEVEL 4

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0602	DS87C550	125C	48	HRS	378		
MOISTURE SOAK			30C/60% R.H.	96	HRS	378		
CONVECTION REFLOW			260C +0/-5C	3	PASS	378	0	
STORAGE LIFE	0617	DS87C550	125C	48	HRS	353		
MOISTURE SOAK			30C/60% R.H.	96	HRS	353		
CONVECTION REFLOW			260C +0/-5C	3	PASS	353	0	
					Total:		**0**	

SOLDER HEAT

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
SOLDER DIP (HEAT RESISTANCE)	0617	DS87C550	380C +/-10C, 3SEC	1	PASS	15	0	
					Total:		**0**	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0602	DS87C550	150C	1000	HRS	77	0	
STORAGE LIFE	0617	DS87C550	150C	1000	HRS	77	0	
					Total:		**0**	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
TEMP CYCLE	0602	DS87C550	-55C TO 125C	1000	CYS	77	0	
TEMP CYCLE	0617	DS87C550	-55C TO 125C	1000	CYS	77	0	
					Total:		**0**	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO

BIASED MOISTURE	0602	DS87C550	85/85, 5.5 VOLTS	1000	HRS	70	0	
BIASED MOISTURE	0617	DS87C550	85/85, 5.5 VOLTS	1000	HRS	77	0	
					Total:		**0**	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
AUTOCLAVE	0602	DS87C550	121C, 2 ATM STEAM, UNBIASED	168	HRS	75	0	
AUTOCLAVE	0617	DS87C550	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0	
					Total:		**0**	

FAILURE RATE: **MTTF (YRS): 32431** **FITS: 3.5**