

RELIABILITY MONITOR REPORT
FOR

TSSOP Package

Dallas Semiconductor

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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)	14	TSSOP	ATK (Amkor, K)	16 TSSOP
ATK (Amkor, K)	20	TSSOP	ATK (Amkor, K)	24 TSSOP
ATP (Amkor, PI)	14	TSSOP	ATP (Amkor, PI)	16 TSSOP
ATP (Amkor, PI)	20	TSSOP	ATP (Amkor, PI)	24 TSSOP
ATP (Amkor, PI)	28	TSSOP	ATP (Amkor, PI)	8 TSSOP
ATP (Amkor, PI)	16	TSSOP & Bump Resistor	ATP (Amkor, PI)	8 TSSOP & Bump Resistor
ATP (Amkor, PI)	14	TSSOP (Pb-Free)	ATP (Amkor, PI)	16 TSSOP (Pb-Free)
ATP (Amkor, PI)	20	TSSOP (Pb-Free)	ATP (Amkor, PI)	24 TSSOP (Pb-Free)
ATP (Amkor, PI)	28	TSSOP (Pb-Free)	ATP (Amkor, PI)	8 TSSOP (Pb-Free)
Carsem	14	TSSOP	Carsem	16 TSSOP
Carsem	20	TSSOP	Carsem	24 TSSOP
Carsem	28	TSSOP	Carsem	8 TSSOP
Carsem	14	TSSOP & Bump Resistor	Carsem	16 TSSOP & Bump Resistor
Carsem	20	TSSOP & Bump Resistor	Carsem	8 TSSOP & Bump Resistor
Carsem	16	TSSOP & Bump Resistor (Pb-Free)	Carsem	14 TSSOP (Pb-Free)
Carsem	16	TSSOP (Pb-Free)	Carsem	20 TSSOP (Pb-Free)
Carsem	24	TSSOP (Pb-Free)	Carsem	28 TSSOP (Pb-Free)
OSEP	14	TSSOP	OSEP	16 TSSOP
OSEP	20	TSSOP	OSEP	24 TSSOP
OSEP	28	TSSOP		

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 111394 FITS: 1.0

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: TSSOP 4.4 mm
 Flammability: UL 94-V0
 Moisture Sensitivity Level 1
 (JEDEC J-STD20A)
 Date Code Range: 0408 to 0452

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH VOLTAGE LIFE	0408	DS1267	125C, 5.5 V, -4.0V	1000 HRS	80	0	
HIGH TEMP OP LIFE	0417	DS2761	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0418	DS4520	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0424	DS1848	125C, 5.5 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0425	DS4077C	125C, 3.6V (PSA) & -4.0V (PSB)	1000 HRS	45	0	
HIGH VOLTAGE LIFE	0431	DS1267	125C, 5.5 V, -4.0V	500 HRS	80	0	

HIGH TEMP OP LIFE	0437	DS2751	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0439	DS1859	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0440	DS13Q10	125C, 3.6 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0440	DS4550	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0440	DS2764	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0442	DS2780	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0450	DS1856	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH VOLTAGE LIFE	0452	DS2761	125C, 5.5 VOLTS	1000	HRS	77	0
Total:							0

PRECONDITIONING LEVEL 1

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
ULTRASOUND	0408	DS1267	J-STD-020		4	0	
STORAGE LIFE	0408	DS1267	125C	24	HRS	241	
MOISTURE SOAK			85 C/85% R.H.	168	HRS	241	
CONVECTION REFLOW			235C +5/-0C	3	PASS	241	0
PRECONDITION U/S	0408	DS1267	J-STD-020		4	0	
ULTRASOUND	0431	DS1267	J-STD-020		241	0	
STORAGE LIFE	0431	DS1267	125C	24	HRS	241	
MOISTURE SOAK			85 C/85% R.H.	168	HRS	241	
CONVECTION REFLOW			235C +5/-0C	3	PASS	241	0
PRECONDITION U/S	0431	DS1267	J-STD-020		4	0	
Total:							0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0417	DS2761	150C	1000	HRS	77	0
STORAGE LIFE	0425	DS4077C	150C	1000	HRS	77	0
Total:							0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0408	DS1267	-55C TO 125C	1000	CYS	40	0
TEMP CYCLE	0417	DS2761	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE	0431	DS1267	-55C TO 125C	1000	CYS	40	0
TEMP CYCLE	0437	DS2751	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE	0439	DS1859	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE	0442	DS2780	-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	0408	DS1267	85/85, 5.5 VOLTS	1000	HRS	77	0

BIASED MOISTURE	0431	DS1267	85/85, 5.5 VOLTS	1000 HRS	77	0
BIASED MOISTURE	0437	DS2751	85/85, 5.5 VOLTS	1000 HRS	77	0
BIASED MOISTURE	0439	DS1859	85/85, 5.5 VOLTS	1000 HRS	77	0
BIASED MOISTURE	0442	DS2780	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	0408	DS1267	121C, 2 ATM STEAM, UNBIASED	168 HRS	40	0	
MOISTURE SOAK	0417	DS2761	85 C/85% R.H.	1000 HRS	77	0	
AUTOCLAVE	0437	DS2751	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0439	DS1859	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
AUTOCLAVE	0442	DS2780	121C, 2 ATM STEAM, UNBIASED	168 HRS	77	0	
Total:						0	

FAILURE RATE: **MTTF (YRS): 111394** **FITS: 1.0**