1/20/07

RELIABILITY MONITOR REPORT
FOR

PDIP 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			
Amertron	10	PDIP	ATP (Amkor, PI)	14	PDIP
ATP (Amkor, PI)	16	PDIP	ATP (Amkor, PI)	18	PDIP
ATP (Amkor, PI)	20	PDIP	ATP (Amkor, PI)	24	PDIP
ATP (Amkor, PI)	28	PDIP	ATP (Amkor, PI)	40	PDIP
ATP (Amkor, PI)	8	PDIP	ATP (Amkor, PI)	14	PDIP (Pb-Free)
ATP (Amkor, PI)	16	PDIP (Pb-Free)	ATP (Amkor, PI)	18	PDIP (Pb-Free)
ATP (Amkor, PI)	20	PDIP (Pb-Free)	ATP (Amkor, PI)	24	PDIP (Pb-Free)
ATP (Amkor, PI)	28	PDIP (Pb-Free)	ATP (Amkor, PI)	40	PDIP (Pb-Free)
ATP (Amkor, PI)	8	PDIP (Pb-Free)	Carsem	14	PDIP
Carsem	16	PDIP	Carsem	24	PDIP
Carsem	14	PDIP (Pb-Free)	CPS (ChipPac, China	8	PDIP
ISPL (ATEC, PI)	24	PDIP	ISPL (ATEC, PI)	28	PDIP
ISPL (ATEC, PI)	40	PDIP	ISPL (ATEC, PI)	0	PDIP (Pb-Free)
ISPL (ATEC, PI)	24	PDIP (Pb-Free)	ISPL (ATEC, PI)	28	PDIP (Pb-Free)
ISPL (ATEC, PI)	40	PDIP (Pb-Free)	Omedata	10	PDIP
OSEP	14	PDIP	OSEP	16	PDIP
OSEP	8	PDIP	OSEP	14	PDIP (Pb-Free)
OSEP	16	PDIP (Pb-Free)	OSEP	8	PDIP (Pb-Free)
Sharp	28	PDIP	UTL (NSEB) UTAC	8	PDIP
UTL (NSEB) UTAC	8	PDIP (Pb-Free)	ZMD	28	PDIP
ZMD	28	PDIP (Pb-Free)			

The calculated failure rate for this assembly is:

FAILURE RATE: **MTTF (YRS): 126904** **FITS: 0.9**

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:	PDIP 300
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	NA
Date Code Range:	0546 to 0648

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0546	DS1302	125C, 5.5 VOLTS	1000 HRS	80	0	
HIGH TEMP OP LIFE	0608	DS1302	125C, 5.5 VOLTS	1000 HRS	80	0	
HIGH TEMP OP LIFE	0612	DS1302	125C, 5.5 VOLTS	1000 HRS	80	0	
HIGH TEMP OP LIFE	0619	DS1921	125C, 5.25 VOLTS	1000 HRS	77	0	
HIGH TEMP OP LIFE	0635	DS2432	125C, 5.25 VOLTS	1000 HRS	77	0	

HIGH TEMP OP LIFE	0648	DS2406	125C, 6.0 VOLTS	1000	HRS	77	0	
					Total:		**0**	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0608	DS1302	150C	1000	HRS	80	0	
STORAGE LIFE	0612	DS1302	150C	1000	HRS	80	0	
STORAGE LIFE	0648	DS2406	150C	1000	HRS	77	0	
					Total:		**0**	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
TEMP CYCLE	0546	DS1302	-55C TO 125C	1000	CYS	45	0	
TEMP CYCLE	0608	DS1302	-55C TO 125C	1000	CYS	45	0	
TEMP CYCLE	0612	DS1302	-55C TO 125C	1000	CYS	45	0	
					Total:		**0**	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
BIASED MOISTURE	0546	DS1302	85/85, 5.5 VOLTS	1000	HRS	77	0	
BIASED MOISTURE	0608	DS1302	85/85, 5.5 VOLTS	1000	HRS	77	0	
BIASED MOISTURE	0612	DS1302	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	0546	DS1302	121C, 2 ATM STEAM, UNBIASED	168	HRS	45	0	
AUTOCLAVE	0608	DS1302	121C, 2 ATM STEAM, UNBIASED	168	HRS	45	0	
AUTOCLAVE	0612	DS1302	121C, 2 ATM STEAM, UNBIASED	168	HRS	45	0	
					Total:		**0**	

Assembly Information:

Package Type:	PDIP 600
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	NA
Date Code Range:	0547 to 0613

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0547	DS80C320	125C, 5.5 VOLTS	1000	HRS	77	0	
HIGH TEMP OP LIFE	0612	DS12885	125C, 5.5 VOLTS	1000	HRS	77	0	
HIGH TEMP OP LIFE	0613	DS80C320	125C, 5.5 VOLTS	1000	HRS	70	0	
					Total:		**0**	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0613	DS80C320	150C	1000	HRS	77	0	
					Total:		**0**	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
TEMP CYCLE	0547	DS80C320	-55C TO 125C	1000	CYS	45	0	
TEMP CYCLE	0612	DS12885	-55C TO 125C	1000	CYS	77	0	
TEMP CYCLE	0613	DS80C320	-55C TO 125C	1000	CYS	45	0	
					Total:		**0**	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
BIASED MOISTURE	0547	DS80C320	85/85, 5.5 VOLTS	1000	HRS	45	1	30047208
HAST	0612	DS12885	130C, 85%R.H.,5.5V	96	HRS	77	0	
BIASED MOISTURE	0613	DS80C320	85/85, 5.5 VOLTS	1000	HRS	45	0	
					Total:		**1**	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
AUTOCLAVE	0547	DS80C320	121C, 2 ATM STEAM, UNBIASED	168	HRS	45	0	
AUTOCLAVE	0612	DS12885	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0	
AUTOCLAVE	0613	DS80C320	121C, 2 ATM STEAM, UNBIASED	168	HRS	45	0	
					Total:		**0**	

Assembly Information:

Package Type:	PDIP (Pb-Free) 300
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	NA
Date Code Range:	0636 to 0636

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0636	DS1302	125C, 5.5 VOLTS	1000	HRS	77	0	
					Total:		**0**	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
TEMP CYCLE	0636	DS1302	-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	0636	DS1302	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	0636	DS1302	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0	
					Total:		**0**	

Assembly Information:

Package Type:	PDIP (Pb-Free) 600
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	NA
Date Code Range:	0548 to 0627

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0548	DS12885	125C, 5.0 VOLTS	1000	HRS	77	0	
HIGH TEMP OP LIFE	0548	DS12885	125C, 5.0 VOLTS	1000	HRS	77	0	
HIGH TEMP OP LIFE	0549	DS80C320	125C, 5.5 VOLTS	1000	HRS	77	0	
HIGH TEMP OP LIFE	0627	DS7865	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)	0548	DS12885	JESD22-B102, COND C			3	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C			3	0	
X-RAY	0548	DS12885	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)	0548	DS12885	JESD22-B102, COND C			3	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C			3	0	
X-RAY	0548	DS12885	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)	0549	DS80C320	JESD22-B102, COND C			3	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C			3	0	
X-RAY	0549	DS80C320	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**	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
STORAGE LIFE	0548	DS12885	150C	1000	HRS	77	0	
STORAGE LIFE	0548	DS12885	150C	1000	HRS	77	0	
STORAGE LIFE	0549	DS80C320	150C	1000	HRS	77	0	
					Total:		**0**	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT		QUANTITY	FAILS	FA NO
TEMP CYCLE	0548	DS12885	-55C TO 125C	1000	CYS	77	0	
TEMP CYCLE	0548	DS12885	-55C TO 125C	1000	CYS	77	0	
TEMP CYCLE	0549	DS80C320	-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	0548	DS12885	85/85, 5.5 VOLTS	1000	HRS	77	0	
BIASED MOISTURE	0548	DS12885	85/85, 5.5 VOLTS	1000	HRS	77	0	
BIASED MOISTURE	0549	DS80C320	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	0548	DS12885	121C, 2 ATM STEAM, UNBIASED	168	HRS	76	0	
AUTOCLAVE	0548	DS12885	121C, 2 ATM STEAM, UNBIASED	168	HRS	75	0	
AUTOCLAVE	0549	DS80C320	121C, 2 ATM STEAM, UNBIASED	168	HRS	77	0	
					Total:		**0**	

FAILURE RATE: **MTTF (YRS): 126904** **FITS: 0.9**