

RELIABILITY MONITOR REPORT
FOR

iButton 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		
ATEC		BRICK	ATEC	iButton F30
ATEC		iButton F50	ATEC	iButton Retainer
ATEC		iButton Socket	Dallas	BRICK
Dallas		Dongle/Fob	Dallas	iButton F30
Dallas		iButton F30 w/Bump	Dallas	iButton F50
Dallas		iButton F50 w/Bump	Dallas	iButton F50nw
Dallas		iButton F50w/IC's	Dallas	iButton R30
Dallas		iButton Retainer	Dallas	iButton Socket
Dallas		Puk Can F50 Insert Mold w/Bump	Dallas	Puk Can F50 Insert Mold w/Bump/
Fastech		BRICK	Fastech	Dongle/Fob
Fastech		iButton F30	Fastech	iButton F30 w/Bump
Fastech		iButton F30w/IC's	Fastech	iButton F50
Fastech		iButton F50 w/Bump	Fastech	iButton F50w/IC's
Hana		iButton F30	Hana	iButton F50

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 925 FITS: 123.4

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 1/1/04 and 12/31/04 .

Assembly Information:

Package Type: iButton
 Flammability: UL 94-V0
 Moisture Sensitivity
 (JEDEC J-STD20A)
 Date Code Range: 0337 to 0441

MECHANICAL LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MECHANICAL SHOCK	0427	DS1923	200G, 1/2 SINE, 6 MS	30	CYS	50	0
VIBRATION, VARIABLE FREQUENCY	0427	DS1923	10g or 0.06", 5Hz-2KHz, X Y Z axis	9	HRS	50	0
Total:						0	

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0425	DS1955B0	85 C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0440	DS1955B0	85 C, 5.25 VOLTS	500	HRS	77	0
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0337	DS1990	70 C	1000 HRS	77	0	
STORAGE LIFE	0350	DS1992	70 C	1000 HRS	77	0	
STORAGE LIFE	0405	DS1990	70 C	1000 HRS	77	0	
STORAGE LIFE	0415	DS1982	85 C	1000 HRS	77	0	
STORAGE LIFE	0422	DS1922L	85 C	1000 HRS	77	0	
STORAGE LIFE	0423	DS1992	70 C	1000 HRS	77	0	
STORAGE LIFE	0425	DS1955B0	85 C	1000 HRS	77	0	
STORAGE LIFE	0427	DS1923	85 C	500 HRS	77	0	
STORAGE LIFE	0429	DS1990	70 C	1000 HRS	77	0	
STORAGE LIFE	0430	DS1923	85 C	1000 HRS	77	0	
STORAGE LIFE	0431	DS1923	85 C	1000 HRS	50	0	
STORAGE LIFE	0435	DS1992	70 C	500 HRS	77	0	
STORAGE LIFE	0440	DS1955B0	85 C	1000 HRS	77	0	
				Total:		0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0337	DS1990	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0350	DS1992	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0405	DS1990	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0415	DS1982	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0423	DS1992	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0425	DS1955B0	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0427	DS1923	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0429	DS1990	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0430	DS1923	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0431	DS1922L	-40 TO 85C	900 CYS	77	0	
TEMP CYCLE	0431	DS1923	-40 TO 85C	1000 CYS	50	0	
TEMP CYCLE	0435	DS1992	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0440	DS1955B0	-40 TO 85C	1000 CYS	77	0	
				Total:		0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0337	DS1990	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0350	DS1992	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0405	DS1990	60C/90% R.H.	1000 HRS	77	0	

MOISTURE SOAK	0415	DS1982	85 C/85% R.H.	1000	HRS	77	0
MOISTURE CYCLING	0422	DS1922L	85 C/85% R.H.	500	CYS	77	0
MOISTURE SOAK			85 C/85% R.H.	1000	HRS	77	0
MOISTURE SOAK	0423	DS1992	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0425	DS1955B0	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0427	DS1923	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0429	DS1990	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0430	DS1923	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0431	DS1923	60C/90% R.H.	1000	HRS	50	0
MOISTURE SOAK	0440	DS1955B0	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0441	DS1922T	60C/90% R.H.	500	HRS	77	0
						Total:	0

FAILURE RATE:

MTTF (YRS): 925

FITS: 123.4