

RELIABILITY MONITOR REPORT
FOR

Power Cap 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	2	Power Cap	Dallas	4 Power Cap
Fastech	2	Power Cap	Fastech	34 Power Cap
Fastech	4	Power Cap	Fastech	2 Power Cap (Pb-Free)
Fastech	34	Power Cap (Pb-Free)	Fastech	4 Power Cap (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: **MTTF (YRS): 2667** **FITS: 42.8**

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 7/1/2005 and 6/30/2006.

Assembly Information:

Package Type: Power Cap 980x980x1.0
 Flammability: UL 94-V0
 Moisture Sensitivity Level 3
 (JEDEC J-STD20A)
 Date Code Range: 0525 to 0525

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0525	DS1644	85 C, 5.5V (PSA) & 0.0V (PSB)	1000 HRS	77	0	
Total:						0	

PRECONDITIONING LEVEL 3

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0525	DS1644	125C	24 HRS	231		
MOISTURE SOAK			30C/60% R.H.	192 HRS	231		
CONVECTION REFLOW			235C +/-0C	2 PASS	231	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0525	DS1644	-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	0525	DS1644	60C/90% R.H.	1000 HRS	77	0	
Total:						0	

Assembly Information:

Package Type: Power Cap (Pb-Free) 980x980x1.0
Flammability: UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A) Level 3
Date Code Range: 0504 to 0545

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0541	DS1744	85 C, 3.3V (PSA) & 0.0V (PSB)	1000 HRS	77	0	
HIGH TEMP OP LIFE	0545	DS1744	85 C, 3.3V (PSA) & 0.0V (PSB)	1000 HRS	68	0	
Total:						0	

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
SOLDERABILITY (Pb-Free)	0525	DS1743	JESD22-B102, COND C		6	0	
SOLDERABILITY (Sn/Pb)			JESD22-B102, COND C		6	0	
X-RAY	0525	DS1743	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
PHYSICAL DIMENSIONS			JESD22-B100		6	0	
LEAD INTEGRITY			JESD22-B105, COND B		6	0	
MARK PERMANENCY			JESD22-B107		6	0	
EXTERNAL VISUAL			JESD22-B101		6	0	
SOLDERABILITY (Sn/Pb)	0541	DS1744	JESD22-B102, COND C		6	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C		6	0	
X-RAY	0541	DS1744	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
PHYSICAL DIMENSIONS			JESD22-B100		6	0	
LEAD INTEGRITY			JESD22-B105, COND B		6	0	
MARK PERMANENCY			JESD22-B107		6	0	
EXTERNAL VISUAL			JESD22-B101		6	0	
SOLDERABILITY (Sn/Pb)	0545	DS1744	JESD22-B102, COND C		6	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C		6	0	
X-RAY	0545	DS1744	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
PHYSICAL DIMENSIONS			JESD22-B100		6	0	
LEAD INTEGRITY			JESD22-B105, COND B		6	0	
MARK PERMANENCY			JESD22-B107		6	0	
EXTERNAL VISUAL			JESD22-B101		6	0	
Total:						0	

PRECONDITIONING LEVEL 3

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0504	DS1743	125C	24 HRS	240		
MOISTURE SOAK			30C/60% R.H.	192 HRS	240		
CONVECTION REFLOW			260C +/-5C	2 PASS	240	0	
STORAGE LIFE	0504	DS1743	125C	24 HRS	240		
MOISTURE SOAK			30C/60% R.H.	192 HRS	240		
CONVECTION REFLOW			260C +/-5C	2 PASS	240	0	

STORAGE LIFE	0504	DS1743	125C	24	HRS	240		
MOISTURE SOAK			30C/60% R.H.	192	HRS	240		
CONVECTION REFLOW			260C +0/-5C	2	PASS	240	0	
STORAGE LIFE	0525	DS1743	125C	24	HRS	235		
MOISTURE SOAK			30C/60% R.H.	192	HRS	235		
CONVECTION REFLOW			260C +0/-5C	2	PASS	235	0	
STORAGE LIFE	0541	DS1744	125C	24	HRS	308		
MOISTURE SOAK			30C/60% R.H.	192	HRS	308		
CONVECTION REFLOW			260C +0/-5C	2	PASS	308	0	
STORAGE LIFE	0545	DS1744	125C	24	HRS	308		
MOISTURE SOAK			30C/60% R.H.	192	HRS	308		
CONVECTION REFLOW			260C +0/-5C	2	PASS	308	0	
					Total:		0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0504	DS1743	85 C	1000 HRS	77	0	
STORAGE LIFE	0504	DS1743	85 C	1000 HRS	77	0	
STORAGE LIFE	0504	DS1743	85 C	1000 HRS	77	0	
STORAGE LIFE	0525	DS1743	85 C	1000 HRS	77	0	
STORAGE LIFE	0541	DS1744	85 C	1000 HRS	76	0	
STORAGE LIFE	0545	DS1744	85 C	1000 HRS	77	0	
					Total:	0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0504	DS1743	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0504	DS1743	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0504	DS1743	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0525	DS1743	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0541	DS1744	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0545	DS1744	-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	0504	DS1743	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0504	DS1743	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0504	DS1743	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0525	DS1743	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0541	DS1744	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0545	DS1744	60C/90% R.H.	1000 HRS	77	0	
					Total:	0	

FAILURE RATE:

MTTF (YRS): 2667

FITS: 42.8