

**RELIABILITY MONITOR REPORT
FOR**

BGA Module 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		
ATP (Amkor, PI)	256	MCMBGA	ATP (Amkor, PI)	300 MCMBGA
Carsem	48	BGA Module w/RRBattery	Dallas	256 BGA Module w/RRBattery
Dallas	168	BGA Module, 1 Side	Dallas	168 BGA Module, 2 Sided, Frame
Fastech	168	BGA Module, 1 Side	Stats	256 MCMBGA
Stats	300	MCMBGA		

Note: Due to the nature of the construction on this assembly, there is no operating life data collected

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 01/04 and 9/30/05 .

Assembly Information:

Package Type: BGA Module 1063
 Flammability: UL 94-V0
 Moisture Sensitivity (JEDEC J-STD20A) Level 3
 Date Code Range: 0447 to 0452

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
X-RAY	0447	DS2045	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
X-RAY	0447	DS2030	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
X-RAY	0452	DS2045	MIL-STD-883-2012 : TOP & SIDE VIEW		6	0	
Total:						0	

PRECONDITIONING LEVEL 3

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0447	DS2045	125C	48 HRS	219		
MOISTURE SOAK			30C/60% R.H.	192 HRS	219		
CONVECTION REFLOW			220C +5/-0C	2 PASS	219	0	
GROSS LEAK			25 C, AIR PRESSURE DECAY		219	0	
STORAGE LIFE	0447	DS2030	125C	48 HRS	205		
MOISTURE SOAK			30C/60% R.H.	192 HRS	205		
CONVECTION REFLOW			220C +5/-0C	2 PASS	205	0	
GROSS LEAK			25 C, AIR PRESSURE DECAY		205	0	
STORAGE LIFE	0452	DS2045	125C	48 HRS	269		
MOISTURE SOAK			30C/60% R.H.	192 HRS	269		
CONVECTION REFLOW			220C +5/-0C	2 PASS	269	0	
GROSS LEAK			25 C, AIR PRESSURE DECAY		269	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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STORAGE LIFE	0447	DS2045	85 C	1000 HRS	65	0
STORAGE LIFE	0447	DS2030	85 C	1000 HRS	51	0
STORAGE LIFE	0452	DS2045	85 C	1000 HRS	114	0
				Total:		0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0447	DS2045	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0447	DS2030	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0452	DS2045	-40 TO 85C	1000 CYS	77	0	
				Total:		0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
FLUX DIP & H2O RINSE	0447	DS2045	JESD22-A113	1 HRS	77	0	
BIASED MOISTURE (BATTERY)			60C/90% R.H., BATTERY BIAS	1000 HRS	77	0	
FLUX DIP & H2O RINSE	0447	DS2030	JESD22-A113	1 HRS	77	0	
BIASED MOISTURE (BATTERY)			60C/90% R.H., BATTERY BIAS	1000 HRS	77	0	
FLUX DIP & H2O RINSE	0452	DS2045	JESD22-A113	1 HRS	77	0	
BIASED MOISTURE (BATTERY)			60C/90% R.H., BATTERY BIAS	1000 HRS	77	0	
				Total:		0	