

RELIABILITY MONITOR REPORT  
FOR

**Cartridge 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		
Consonic T	3	Cartridge	Dallas	0 Cartridge
Dallas	3	Cartridge	Fastech	2 Cartridge
Fastech	3	Cartridge	Fastech	2 Cartridge (Pb-Free)
Fastech	2	Cartridge w/Chip on Board	Fastech	2 Cartridge w/Flip Chip
Hana	2	Cartridge w/Chip on Board		

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 7/1/04 and 6/30/05.

**Assembly Information:**

Package Type: Cartridge 250 mil  
 Flammability: UL 94-V0  
 Moisture Sensitivity (JEDEC J-STD20A)  
 Date Code Range: 0414 to 0426

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0414	DS29020	70 C	336 HRS	77	0	
STORAGE LIFE	0414	DS29020	70 C	336 HRS	76	0	
STORAGE LIFE	0425	DS29020	70 C	336 HRS	77	0	
STORAGE LIFE	0426	DS29020	70 C	336 HRS	76	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0414	DS29020	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0414	DS29020	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0425	DS29020	-40 TO 85C	500 CYS	77	0	
TEMP CYCLE	0426	DS29020	-40 TO 85C	500 CYS	77	0	
<b>Total:</b>						<b>0</b>	

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0414	DS29020	85 C/85% R.H.	274 HRS	77	0	
MOISTURE SOAK	0414	DS29020	85 C/85% R.H.	274 HRS	77	0	
MOISTURE SOAK	0425	DS29020	85 C/85% R.H.	274 HRS	77	0	
MOISTURE SOAK	0426	DS29020	85 C/85% R.H.	274 HRS	77	0	

Total: 0

**Assembly Information:**

Package Type: Cartridge 670 mil  
Flammability: UL 94-V0  
Moisture Sensitivity (JEDEC J-STD20A) Level 1  
Date Code Range: 0504 to 0504

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0504	DSQ33G4	85 C	1000 HRS	77	0	
STORAGE LIFE	0504	DSQ33G4	85 C	1000 HRS	77	0	
STORAGE LIFE	0504	DSQ33G4	85 C	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0504	DSQ33G4	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0504	DSQ33G4	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0504	DSQ33G4	-40 TO 85C	1000 CYS	77	0	
<b>Total:</b>						<b>0</b>	

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0504	DSQ33G4	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0504	DSQ33G4	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0504	DSQ33G4	60C/90% R.H.	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

**Assembly Information:**

Package Type: Cartridge (Pb-Free) 670 mil  
Flammability: UL 94-V0  
Moisture Sensitivity (JEDEC J-STD20A) Level 1  
Date Code Range: 0451 to 0451

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0451	DSQ33G1+ M01	85 C	1000 HRS	77	0	
STORAGE LIFE	0451	DSQ33G1+ M01	85 C	1000 HRS	77	0	
STORAGE LIFE	0451	DSQ33G1+ M01	85 C	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

---

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0451	DSQ33G1+ M01	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0451	DSQ33G1+ M01	-40 TO 85C	1000 CYS	77	0	
TEMP CYCLE	0451	DSQ33G1+ M01	-40 TO 85C	1000 CYS	77	0	
<b>Total:</b>						<b>0</b>	

---

**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0451	DSQ33G1+ M01	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0451	DSQ33G1+ M01	60C/90% R.H.	1000 HRS	77	0	
MOISTURE SOAK	0451	DSQ33G1+ M01	60C/90% R.H.	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	