

RELIABILITY MONITOR REPORT  
FOR

**Module Package**

**Dallas Semiconductor**

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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	6	Module	Dallas	10 Module w/Bent Frame
Dallas	14	Module w/Bent Frame	Dallas	16 Module w/Bent Frame
Dallas	24	Module w/Bent Frame	Dallas	28 Module w/Bent Frame
Dallas	7	Module w/Bent Frame	Dallas	24 Module w/Hi Density SMT
Dallas	26	Module w/Hi Density SMT	Dallas	28 Module w/Hi Density SMT
Dallas	32	Module w/Hi Density SMT	Dallas	36 Module w/Hi Density SMT
Dallas	40	Module w/Hi Density SMT	Dallas	0 Module w/Thru Hole
Dallas	24	Module w/Thru Hole	Dallas	28 Module w/Thru Hole
Dallas	32	Module w/Thru Hole	Dallas	42 Module w/Thru Hole
Fastech	6	Module	Fastech	10 Module w/Bent Frame
Fastech	14	Module w/Bent Frame	Fastech	16 Module w/Bent Frame
Fastech	24	Module w/Bent Frame	Fastech	28 Module w/Bent Frame
Fastech	24	Module w/Bent Frame (Pb-Free)	Fastech	28 Module w/Bent Frame (Pb-Free)
Fastech	24	Module w/Hi Density SMT	Fastech	28 Module w/Hi Density SMT
Fastech	32	Module w/Hi Density SMT	Fastech	36 Module w/Hi Density SMT
Fastech	40	Module w/Hi Density SMT	Fastech	24 Module w/Hi Density SMT (Pb-Free)
Fastech	28	Module w/Hi Density SMT (Pb-Free)	Fastech	32 Module w/Hi Density SMT (Pb-Free)
Fastech	24	Module w/Thru Hole	Fastech	28 Module w/Thru Hole
Fastech	32	Module w/Thru Hole	Fastech	24 Module w/Thru Hole (Pb-Free)
Fastech	28	Module w/Thru Hole (Pb-Free)	Fastech	32 Module w/Thru Hole (Pb-Free)
FDK	24	Module w/Hi Density SMT	FDK	26 Module w/Hi Density SMT
FDK	28	Module w/Hi Density SMT		

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 10/1/2005 and 9/30/2006.

**Assembly Information:**

Package Type: Module 720  
 Flammability: UL 94-V0  
 Moisture Sensitivity (JEDEC J-STD20A) NA  
 Date Code Range: 0545 to 0624

**PACKAGE TESTS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
SOLDERABILITY (Sn/Pb)	0545	DS1643	JESD22-B102, COND C		3	0	
PHYSICAL DIMENSIONS	0545	DS1643	JESD22-B100		6	0	
SOLDERABILITY (Sn/Pb)	0624	DS1643	JESD22-B102, COND C		3	0	
PHYSICAL DIMENSIONS	0624	DS1643	JESD22-B100		6	0	
<b>Total:</b>						<b>0</b>	

**STORAGE LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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STORAGE LIFE	0545	DS1643	70 C	1000 HRS	77	0
STORAGE LIFE	0624	DS1643	70 C	1000 HRS	77	0
<b>Total:</b>						<b>0</b>

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#### TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0545	DS1643	0C TO 70C	1000 CYS	80	1	30048984
TEMP CYCLE	0624	DS1643	0C TO 70C	1000 CYS	80	0	
<b>Total:</b>						<b>1</b>	

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#### UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	0545	DS1643	60C/90% R.H.	1000 HRS	80	4	40048986
MOISTURE SOAK	0624	DS1643	60C/90% R.H.	1000 HRS	80	0	
<b>Total:</b>						<b>4</b>	

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#### Assembly Information:

Package Type:                   Module (Pb-Free) 720  
 Flammability:                   UL 94-V0  
 Moisture Sensitivity  
 (JEDEC J-STD20A)               NA  
 Date Code Range:               0548    to 0548

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#### PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
SOLDERABILITY (Sn/Pb)	0548	DS1747	JESD22-B102, COND C		3	0	
SOLDERABILITY (Pb-Free)			JESD22-B102, COND C		3	0	
X-RAY	0548	DS1747	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	
<b>Total:</b>						<b>0</b>	

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#### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	0548	DS1747	85 C	1000 HRS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
<b>Total:</b>						<b>0</b>	

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#### TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0548	DS1747	-40 TO 85C	1000 CYS	77	0	
VISUAL INSPECTION			WHISKERS < 50uM		3	0	
<b>Total:</b>						<b>0</b>	

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#### TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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BIASED MOISTURE	0548	DS1747	85/85, 5.5 VOLTS	1000 HRS	77	0
VISUAL INSPECTION			WHISKERS < 50uM		3	0
				<b>Total:</b>		<b>0</b>