

RELIABILITY MONITOR REPORT  
FOR

**PDIP 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		
ATEC	24	PDIP	ATEC	28 PDIP
ATEC	40	PDIP	ATP (Amkor, PI)	14 PDIP
ATP (Amkor, PI)	16	PDIP	ATP (Amkor, PI)	18 PDIP
ATP (Amkor, PI)	20	PDIP	ATP (Amkor, PI)	24 PDIP
ATP (Amkor, PI)	28	PDIP	ATP (Amkor, PI)	40 PDIP
ATP (Amkor, PI)	8	PDIP	Carsem	14 PDIP
Carsem	16	PDIP	Carsem	24 PDIP
NSEB	8	PDIP	OSEP	14 PDIP
OSEP	16	PDIP	OSEP	8 PDIP

The calculated failure rate for this assembly is:

**FAILURE RATE:**                      **MTTF (YRS): 13924**                      **FITS: 8.2**

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:                      PDIP 300 mil  
 Flammability:                      UL 94-V0  
 Moisture Sensitivity  
 (JEDEC J-STD20A)  
 Date Code Range:                      0348                      to                      0404

**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0348	DS1302	125C, 5.5 VOLTS	1000 HRS	80	0	
HIGH TEMP OP LIFE	0404	DS1302	125C, 5.5 VOLTS	1000 HRS	80	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE CYCLE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE	0348	DS1302	-55C TO 125C	1000 CYS	45	0	
TEMP CYCLE	0404	DS1302	-55C TO 125C	1000 CYS	45	0	
<b>Total:</b>						<b>0</b>	

**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	0348	DS1302	85/85, 5.5 VOLTS	1000 HRS	77	0	
BIASED MOISTURE	0404	DS1302	85/85, 5.5 VOLTS	1000 HRS	77	0	
<b>Total:</b>						<b>0</b>	

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**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0348	DS1302	121C, 2 ATM STEAM, UNBIASED	96	HRS	45	0
AUTOCLAVE	0404	DS1302	121C, 2 ATM STEAM, UNBIASED	96	HRS	45	0
<b>Total:</b>						<b>0</b>	

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**Assembly Information:**

Package Type: PDIP 600 mil  
Flammability: UL 94-V0  
Moisture Sensitivity  
(JEDEC J-STD20A)  
Date Code Range: 0351 to 0435

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**OPERATING LIFE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	0351	DS80C320	125C, 5.5 VOLTS	1000	HRS	77	0
<b>Total:</b>						<b>0</b>	

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**PACKAGE TESTS**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
ULTRASOUND	0435	DS80C320	J-STD-020		244	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	0351	DS80C320	-55C TO 125C	1000	CYS	45	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
BIASED MOISTURE	0351	DS80C320	85/85, 5.5 VOLTS	1000	HRS	77	0
<b>Total:</b>						<b>0</b>	

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**UNBIASED MOISTURE RESISTANCE**

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
AUTOCLAVE	0351	DS80C320	121C, 2 ATM STEAM, UNBIASED	96	HRS	45	0
<b>Total:</b>						<b>0</b>	

**FAILURE RATE: MTTF (YRS): 13924 FITS: 8.2**