04/30/2004

RELIABILITY REPORT
FOR

DS5000T, Fastech Assembly

Dallas Semiconductor

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Conclusion:

The following qualification successfully meets the quality and reliability standards required of all Dallas Semiconductor products and processes:

DS5000T, Fastech Assembly

In addition, Dallas Semiconductor's continuous reliability monitor program ensures that all outgoing product will continue to meet Maxim's quality and reliability standards. The current status of the reliability monitor program can be viewed at http://www.maxim-ic.com/TechSupport /dsreliability.html.*

Module Description:

A description of this Module can be found in the product data sheet. You can find the product data sheet at http://dbserv.maxim-ic.com/l_datasheet3.cfm.*

Reliability Derating:

A module device consists of one or more IC's in a single, upward integrated, package. This package is assembled to include batteries, crystals, and other piece parts that make up the configuration of the Module. Because of either the complexity of the package or the included piece parts, standard high temperature reliability testing is not possible. Therefore, in order to determine the reliability of module products, the reliability of each of the piece parts is individually determined, then summed to determine the reliability of the integrated module product. If there are "n" significant components in the module then:

Fr (module) = Fr (1) + Fr (2) + Fr (3) + ... + Fr (n)
Fr (module) = Failure rate of module
Fr(n) = Failure rate of the nth component

Failure Rates are reported in FITs (Failures in Time) or MTTF (Mean Time To Failure). The FIT rate is related to MTTF by:

MTTF = 1/Fr

NOTE: MTTF is frequently used interchangeably with MTBF.

The calculated failure rate for this module/assembly is:

Module Device:	Quantity:	MTTF (Yrs):	FITs:
CRYSTAL	**1**	**12458**	**9.2**
DS5000	**1**	**22467**	**5.1**
CR1620	**1**	**29651**	**3.8**
256K SRAM	**1**	**35134**	**3.2**
DS1214	**1**	**82001**	**1.4**
Totals:		**5021**	**22.7**

The parameters used to calculate the module failure rate are as follows:

Cf: 60% **Ea: 0.7** **B: 0** **Tu: 25** **°C** **Vu: 5.5** **Volts**

The reliability data follows. A the start of this data is the module assembly information. This is a description of the module. The next section is the detailed reliability data for each stress found in the qualification / monitor. If there are additional processes or assemblies used as part of this report, a description of each will follow which includes the respective reliability data for that process/ assembly. The reliability data section includes the latest data available. Some of this data may be generic with other packages or products.

* Some proprietary products may be excepted from this requirement.

Assembly Information:

Assembly Site:	Fastech
Pin Count:	40
Package Type:	SBModule
Body Size:	600
Mold Compound:	Amicon/Ceramic
Lead Frame:	Stamped Alloy 42
Lead Finsh:	
Die Attach:	JM 7000 Ag Polymer
Bond Wire / Size:	/
Flammability:	UL 94-V0
Moisture Sensitivity (JEDEC J-STD20A)	
Date Code Range:	0348 to 0348

PACKAGE TESTS

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
SOLDERABILITY	0348	JESD22-B102	3	DYS	3	0
X-RAY	0348	MIL-STD-883-2012 : TOP & SIDE VIEW	3	DYS	3	0
PHYSICAL DIMENSIONS		JESD22-B100	3	DYS	3	0
MARK PERMANENCY		JESD22-B107	3	DYS	3	0
LEAD INTEGRITY		JESD22-B105 TEST CONDITION B	3	DYS	3	0
				Total:		**0**

STORAGE LIFE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
STORAGE LIFE	0348	70 C	1000	HRS	22	0
				Total:		**0**

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
TEMP CYCLE	0348	0C TO 70C	1000	CYS	22	0
				Total:		**0**

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
MOISTURE SOAK	0348	60C/90% R.H.	1000	HRS	22	0
				Total:		**0**