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RELIABILITY REPORT
FOR

DS1961S

Dallas Semiconductor

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Prepared by:



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Conclusion:

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

DS1961S

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:
DS1961	**1**	**18096**	**6.3**
Totals:		**18096**	**6.3**

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:	2
Package Type:	iButton F50
Body Size:	16.25mm
Glob Top:	FP4323, Dexter Hysol
Lead Frame:	PCB; FR4
Lead Finsh:	Stainless Steel
Die Attach:	Underfill FP4527, Dexter Hysol
Flammability:	UL 94-V0
Date Code Range:	0230 to 0303

ELECTRICAL CHARACTERIZATION

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
ESD SENSITIVITY	0230	IEC 1000-4-2 CONTACT 2000 VOLTS	10	PUL'S	3	0
ESD SENSITIVITY	0230	IEC 1000-4-2 CONTACT 4000 VOLTS	10	PUL'S	3	0
ESD SENSITIVITY	0230	IEC 1000-4-2 CONTACT 8000 VOLTS	10	PUL'S	3	0
ESD SENSITIVITY	0230	IEC 1000-4-2 AIR 8000 VOLTS	10	PUL'S	3	0
ESD SENSITIVITY	0230	IEC 1000-4-2 AIR 10000 VOLTS	10	PUL'S	3	0
ESD SENSITIVITY	0230	IEC 1000-4-2 AIR 15000 VOLTS	10	PUL'S	3	3
ESD SENSITIVITY	0230	IEC 1000-4-2 AIR 20000 VOLTS	10	PUL'S	3	3
				Total:		**6**

OPERATING LIFE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
HIGH VOLTAGE LIFE	0230	125C, 6.0 VOLTS	1000	HRS	77	0
HIGH VOLTAGE LIFE	0303	125C, 6.0 VOLTS	1000	HRS	77	0
				Total:		**0**

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
TEMP CYCLE	0240	-55C TO 125C	1000	CYS	77	0
TEMP CYCLE	0240	-55C TO 125C	1000	CYS	77	0
				Total:		**0**

W/E ENDURANCE AND DATA RET'N

DESCRIPTION	DATE CODE	CONDITION	READPOINT	QUANTITY	FAILS

WRITE CYCLE STRESS	0303	85 C , 5.25 VOLTS	20	KCYS	77	0
STORAGE LIFE		150C	1000	HRS	77	0
WRITE CYCLE STRESS	0303	85 C , 5.25 VOLTS	50	KCYS	77	0
STORAGE LIFE		150C	1000	HRS	77	2
WRITE CYCLE STRESS	0303	25 C, 5.25 VOLTS	50	KCYS	77	0
STORAGE LIFE		150C	1000	HRS	77	0
WRITE CYCLE STRESS	0303	25 C, 5.25 VOLTS	40	KCYS	77	0
STORAGE LIFE		150C	1000	HRS	77	1
				Total:		3