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RELIABILITY REPORT
FOR

USE THIS PART FOR DS1220Y

DS1220 Rev D2 AD

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:

DS1220 Rev D2 AD

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:
DS7864	**1**	**18096**	**6.3**
BR1225	**1**	**173708**	**0.7**
Totals:		**16388**	**7.0**

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 proprietary products may be excepted from this requirement.

Assembly Information:

Assembly Site:	Fastech
Pin Count:	24
Package Type:	Module w/Thru Hole
Body Size:	720 mil
Mold Compound:	Amicon
Lead Frame:	PCB; FR4
Die Attach:	?
Flammability:	UL 94-V0
Date Code Range:	0311 to 0401

PACKAGE TESTS

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
SOLDERABILITY	0311	JESD22-B102	1	DYS	3	0
PHYSICAL DIMENSIONS	0311	JESD22-B100	1	DYS	6	0
SOLDERABILITY	0317	JESD22-B102	5	DYS	3	0
PHYSICAL DIMENSIONS	0317	JESD22-B100	5	DYS	6	0
SOLDERABILITY	0318	JESD22-B102	1	DYS	3	0
PHYSICAL DIMENSIONS	0318	JESD22-B100	1	DYS	6	0
SOLDERABILITY	0323	JESD22-B102	1	DYS	2	1
PHYSICAL DIMENSIONS	0323	JESD22-B100	1	DYS	6	0
SOLDERABILITY	0333	JESD22-B102	5	DYS	3	0
PHYSICAL DIMENSIONS	0333	JESD22-B100	5	DYS	6	0
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:		**1**

STORAGE LIFE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
STORAGE LIFE	0317	70 C	1000	HRS	77	0
STORAGE LIFE	0333	70 C	1000	HRS	77	0
STORAGE LIFE	0348	70 C	300	HRS	22	0

STORAGE LIFE	0401	85 C	336	HRS	77	0
				Total:		**0**

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
TEMP CYCLE	0311	-40 TO 85C	300	CYS	100	0
TEMP CYCLE	0317	0C TO 70C	1000	CYS	77	0
TEMP CYCLE	0318	-40 TO 85C	300	CYS	100	0
TEMP CYCLE	0323	-40 TO 85C	300	CYS	100	0
TEMP CYCLE	0333	0C TO 70C	1000	CYS	77	0
TEMP CYCLE	0348	0C TO 70C	1000	CYS	22	0
TEMP CYCLE	0401	0C TO 70C	300	CYS	77	0
				Total:		**0**

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
BIASED MOISTURE	0311	85/85, 5.5 VOLTS	1000	HRS	100	0
BIASED MOISTURE	0318	85/85, 5.5 VOLTS	1000	HRS	100	0
BIASED MOISTURE	0323	85/85, 5.5 VOLTS	1000	HRS	100	0
				Total:		**0**

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	CONDITION	READPOINT		QUANTITY	FAILS
MOISTURE SOAK	0317	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0333	60C/90% R.H.	1000	HRS	77	0
MOISTURE SOAK	0348	60C/90% R.H.	300	HRS	22	0
MOISTURE SOAK	0401	60C/90% R.H.	336	HRS	77	0
				Total:		**0**