

4/2/2012

### PRODUCT RELIABILITY REPORT FOR

## DS1731, Rev A5

# **Maxim Integrated Products**

4401 South Beltwood Parkway Dallas, TX 75244-3292

Prepared by:

Don Lipps Manager, Reliability Engineering Maxim Integrated Products 4401 South Beltwood Pkwy. Dallas, TX 75244-3292 Email: don.lipps@maxim-ic.com ph: 972-371-3739

#### **Conclusion:**

The following qualification successfully meets the quality and reliability standards required of all Maxim products:

```
DS1731, Rev A5
```

In addition, Maxim'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.

#### **Device Description:**

A description of this device 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:**

The Arrhenius model will be used to determine the acceleration factor for failure mechanisms that are temperature accelerated.

AfT = exp((Ea/k)\*(1/Tu - 1/Ts)) = tu/ts AfT = Acceleration factor due to Temperature tu = Time at use temperature (e.g. 55°C) ts = Time at stress temperature (e.g. 125°C) k = Boltzmann's Constant (8.617 x 10-5 eV/°K) Tu = Temperature at Use (°K) Ts = Temperature at Stress (°K) Ea = Activation Energy (e.g. 0.7 ev)

The activation energy of the failure mechanism is derived from either internal studies or industry accepted standards, or activation energy of 0.7ev will be used whenever actual failure mechanisms or their activation energies are unknown. All deratings will be done from the stress ambient temperature to the use ambient temperature.

An exponential model will be used to determine the acceleration factor for failure mechanisms, which are voltage accelerated.

 $\begin{array}{l} AfV = \exp(B^{*}(Vs - Vu))\\ AfV = Acceleration factor due to Voltage\\ Vs = Stress Voltage (e.g. 7.0 volts)\\ Vu = Maximum Operating Voltage (e.g. 5.5 volts)\\ B = Constant related to failure mechanism type (e.g. 1.0, 2.4, 2.7, etc.) \end{array}$ 

The Constant, B, related to the failure mechanism is derived from either internal studies or industry accepted standards, or a B of 1.0 will be used whenever actual failure mechanisms or their B are unknown. All deratings will be done from the stress voltage to the maximum operating voltage. Failure rate data from the operating life test is reported using a Chi-Squared statistical model at the 60% or 90% confidence level (Cf).

The failure rate, Fr, is related to the acceleration during life test by:

Fr = X/(ts \* AfV \* AfT \* N \* 2)X = Chi-Sq statistical upper limit N = Life test sample size 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 device/process is:

FAILURE RATE:	MTTF (YRS):	51730	FITS:	2.2	
	DEVICE HOURS:	916418895	FAILS:	1	
Only data from Operating Life of	or similar stresses are	used for this c	alculation.		
The parameters used to calcula	ate 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 the device information. The next section is the detailed reliability data for each stress. The reliability data section includes the latest data available and may contain some generic data. **Bold** Product Number denotes specific product data.

Device Information	on:								
Process: Passivation: Die Size: Number of Transistors: Interconnect: Gate Oxide Thickness:		SA E6W, 0.6um BiCMOS, 2 Poly, 2 Metal, EEPROM, 8 inch wafer TEOS Oxide-Nitride Passivation 71 x 54 9279 Aluminum / 0.5% Copper 150 Å							
ESD CDM									
DESCRIPTION	DATE	CODE/PRODUCT	/LOT	CONDITION	REA	DPOIN	QTY	FAILS	FA#
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-C101 CDM 250 VOLTS	3	PUL'S	3	0	
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-C101 CDM 500 VOLTS	3	PUL'S	3	0	
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-C101 CDM 750 VOLTS	3	PUL'S	3	0	
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-C101 CDM 1000 VOLTS	3	PUL'S	3	0	
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-C101 CDM 2000 VOLTS	3	PUL'S	3	3	No FA
					Tota	l:		3	
ESD HBM									
DESCRIPTION	DATE	CODE/PRODUCT	/LOT	CONDITION	REA	DPOIN	QTY	FAILS	FA#
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 1000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 1500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	1036	D\$1721	FJ158187AC	JESD22-A114 HBM 2000 VOLTS	1	PUL'S	3	0	

ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 3000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 4000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 4500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 4500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 6500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 6500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 2500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 3500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 4000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 5000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 5000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 5000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD/2-A114 HBM 7000   1   PUL'S   3   0     LATCH-UP   1036   DS1721 <td< td=""><td></td><td>ESD SENSITIVITY</td><td>1036</td><td>DS1721</td><td>FJ158187AC</td><td>JESD22-A114 HBM 3000 VOLTS</td><td>1</td><td>PUL'S</td><td>3</td><td>0</td><td></td></td<>		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 3000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD 22.A114 HBM 4000   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD 22.A114 HBM 4500   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 5000   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 5000   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 5000   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 7000   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 7000   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 7000   1   PULS   3   0     ESD SENSITIVITY   1036   DS1721 <t< td=""><td></td><td>ESD SENSITIVITY</td><td>1036</td><td>D\$1721</td><td>FJ158187AC</td><td>JESD22-A114 HBM 3500 VOLTS</td><td>1</td><td>PUL'S</td><td>3</td><td>0</td><td></td></t<>		ESD SENSITIVITY	1036	D\$1721	FJ158187AC	JESD22-A114 HBM 3500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD 2.2.4114 HBM 5500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.2.4114 HBM 5500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.2.4114 HBM 6500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.2.4114 HBM 6500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.2.4114 HBM 6500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.2.4114 HBM 6000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.2.4114 HBM 6000   1   PUL'S   3   0     LATCH-UP   1036   DS1721   F.J158187AC   JESD2.2.4114 HBM 8000   1   PUL'S   3   0     LATCH-UP I   1036   DS1721		ESD SENSITIVITY	1036	D\$1721	FJ158187AC	JESD22-A114 HBM 4000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.A114 HBM 5000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.A114 HBM 6000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.A114 HBM 6000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.A114 HBM 6000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.A114 HBM 6000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   F.J158187AC   JESD2.A114 HBM 6000   1   PUL'S   3   0     LATCH-UP   1036   DS1721   F.J158187AC   JESD78A, I-TEST 125C   6   0   0     LATCH-UP   1036   DS1721   F.J158187AC   JESD78A, V-SUPPLY   6   0   0   0   0     LATCH-UP   1036   DS1721   F.J158187AC		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 4500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 5500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 6000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD2-A114 HBM 7000   1   PUL'S   3   0     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   Total:   0   7     LATCH-UP 1   1036   DS1721   FJ158187AC <t< td=""><td></td><td>ESD SENSITIVITY</td><td>1036</td><td>DS1721</td><td>FJ158187AC</td><td>JESD22-A114 HBM 5000 VOLTS</td><td>1</td><td>PUL'S</td><td>3</td><td>0</td><td></td></t<>		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 5000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 6000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 6600   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7600   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7500   1   PUL'S   3   0     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, I-TEST 125C   6   0   7   6   0     LATCH-UP I   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   Total:   0   7   1   4     LATCH-UP I   1036   D		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 5500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD 22.A114 HBM 6500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22.A114 HBM 7000   1   PUL'S   3   0     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY TEST 125C   6   0   6   0     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY TEST 125C   6   0   77   6   0     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY TEST 125C   6   0   77   140023508     HACH-UP V   1036   DS18		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 6000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7500   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 7500   1   PUL'S   3   0     LATCH-UP   DESCRIPTION   DATE   COE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FAILS   FA#     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, I-TEST 125C   6   0     LATCH-UP 1   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0   7     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0   7     DESCRIPTION   DATE   COE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FA#     HIGH TEMP OP LIFE		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 6500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 8000   1   PUL'S   3   0     ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD22-A114 HBM 8000   1   PUL'S   3   0     LATCH-UP    DESCRIPTION   DATE CODE/PRODUCT/LOT   CONDITION   READPOIN   QT   FAILS   FA#     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, I-TEST 125C   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     DESCRIPTION   DATE CODE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FAILS   FA#     HIGH TEMP OP LIFE   0720   DS1851   QK707606BB 125C, 5.5 VOLTS <td></td> <td>ESD SENSITIVITY</td> <td>1036</td> <td>DS1721</td> <td>FJ158187AC</td> <td>JESD22-A114 HBM 7000 VOLTS</td> <td>1</td> <td>PUL'S</td> <td>3</td> <td>0</td> <td></td>		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 7000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY   1036   DS1721   FJ158187AC   JESD 22-A114 HBM 8000   1   PUL'S   3   0     LATCH-UP   DATE   CODE/PRODUCT/LOT   CONDITION   READPOIN   QT   FAILS   FA#     LATCH-UP   1036   DS1721   FJ158187AC   JESD78A, I-TEST 125C   6   0     LATCH-UP I   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     DESCRIPTION   DATE   CODE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FA#     HIGH TEMP OP LIFE   0720   DS1851   QK707606BB   125C, 5.5 VOLTS   1000   HRS   77		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 7500 VOLTS	1	PUL'S	3	0	
LATCH-UP   READPOIN   QTV   FAILS   FA#     LATCH-UP I   1036   DS1721   FJ158187AC   JESD78A, I-TEST 125C   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, I-TEST 125C   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     DESCRIPTION   DATE   CODE/PRODUCT/LOT   CONDITION   READPOIN   QTV   FAILS   FA#     HIGH TEMP OP LIFE   0720   DS1851   QK707606BB   125C, 5.5 VOLTS   192   HRS   77   0   7   1<40023508		ESD SENSITIVITY	1036	DS1721	FJ158187AC	JESD22-A114 HBM 8000 VOLTS	1	PUL'S	3	0	
LATCH-UP   DESCRIPTION   DATE CODE/PRODUCT/LOT   CONDITION   READPOIN   QTV   FAILS   FA#     LATCH-UP I   1036   DS1721   FJ158187AC   JESD78A, I-TEST 125C   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY   6   0     COPERATING LIFE   Total:   0   Total:   0    77   0     HIGH TEMP OP LIFE   0720   DS1851   QK707606BB 125C, 5.5 VOLTS   192   HRS   77   0     HIGH TEMP OP LIFE   0948   DS1856   WM049367A   125C, 5.5 VOLTS   192   HRS   45   0     HIGH TEMP OP LIFE   1021   DS1804   WD049849A   125C, 5.5 VOLTS   1000							Total:			0	
DESCRIPTION   DATE CODE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FAILS   FAILS     LATCH-UP I   1036   DS1721   FJ158187AC   JESD78A, LTEST 125C   Image: Condition of the cond		LATCH-UP									
LATCH-UP I 1036 DS1721 FJ158187AC JESD78A, I-TEST 125C 6 0   LATCH-UP V 1036 DS1721 FJ158187AC JESD78A, V-SUPPLY 6 0   Total: 0   OPERATING LIFE   DESCRIPTION DATE CODE/PRODUCT/LOT CONDITION READPOIN 0 FAILS FAILS   HIGH TEMP OP LIFE 0720 DS1856 WM049367A 125C, 5.5 VOLTS 1000 HRS 77 0 0 140022508   HIGH TEMP OP LIFE 1021 DS1804 WD049849A 125C, 5.5 VOLTS 1000 HRS 77 0 0 HIGH TEMP OP LIFE 1050 DS1856 WM158219A 125C,		DESCRIPTION	DATE	CODE/PRODUCT/	LOT	CONDITION	READ	POIN	QTY	FAILS	FA#
LATCH-UP V   1036   DS1721   FJ158187AC   JESD78A, V-SUPPLY TEST 125C   6   0     Total:   0     COPERATING LIFE   0     DESCRIPTION   DATE CODE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FAILS   FA#     HIGH TEMP OP LIFE   0720   DS1851   QK707606BB   125C, 5.5 VOLTS   192   HRS   77   0     HIGH TEMP OP LIFE   0211   DS1856   WM049367A   125C, 5.5 VOLTS   192   HRS   77   1   40023508     HIGH TEMP OP LIFE   1021   DS1856   WM049367A   125C, 5.5 VOLTS   192   HRS   77   0     HIGH TEMP OP LIFE   1021   DS1850   FJ157931AB   125C, 5.5 VOLTS   1000   HRS   77   0     HIGH TEMP OP LIFE   1050   DS1856   WM158219A   125C, 5.5 VOLTS   1000   HRS   77   0     HIGH TEMP OP LIFE   1052   DS1856   FJ162135DB   125C, 5.5 VOLTS   1000   HRS   77   0     HIG		LATCH-UP I	1026						~		
Total:   0     OPERATING LIFE     DESCRIPTION   DATE CODE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FAILS   FA#     HIGH TEMP OP LIFE   0720   DS1851   QK707606BB 125C, 5.5 VOLTS   192   HRS   77   0     HIGH TEMP OP LIFE   0948   DS1856   WM049367A 125C, 5.5 VOLTS   1000   HRS   77   1 40023508     HIGH TEMP OP LIFE   1021   DS1804   WD049849A   125C, 5.5 VOLTS   1000   HRS   80   0     HIGH TEMP OP LIFE   1025   DS18520   FJ157931AB   125C, 5.5 VOLTS   1000   HRS   80   0     HIGH TEMP OP LIFE   1050   DS1856   WM158219A   125C, 5.5 VOLTS   1000   HRS   77   0     HIGH TEMP OP LIFE   1050   DS1856   WM158219A   125C, 5.5 VOLTS   1000   HRS   77   0     HIGH TEMP OP LIFE   1052   DS1856   FJ162135DB   125C, 5.5 VOLTS   1000   HRS   77   0     HIGH TEMP OP LIFE <t< td=""><td></td><td></td><td>1030</td><td>DS1721</td><td>FJ158187AC</td><td>JESD78A, I-TEST 125C</td><td></td><td></td><td>6</td><td>0</td><td></td></t<>			1030	DS1721	FJ158187AC	JESD78A, I-TEST 125C			6	0	
OPERATING LIFE   CONDITION   READPOIN   OTY   FAILS   PAILS     HIGH TEMP OP LIFE   770   D1851   QK707606BB 125C, 5.5 VOLTS   192   HRS   77   0     HIGH TEMP OP LIFE   0740   DS1851   QK707606BB 125C, 5.5 VOLTS   1900   HRS   77   1   4000000000000000000000000000000000000		LATCH-UP V	1036	DS1721 DS1721	FJ158187AC	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C			6	0	
DESCRIPTION   DATE CODE/PRODUCT/LOT   CONDITION   READPOIN   QTY   FAILS   FAIR     HIGH TEMP OP LIFE   0720   DS1851   QK707606BB 125C, 5.5 VOLTS   192   HRS   77   0     HIGH TEMP OP LIFE   0948   DS1856   WM049367A 125C, 5.5 VOLTS   1000   HRS   77   1 40023508     HIGH TEMP OP LIFE   1021   DS1800   WD049849A 125C, 5.5 VOLTS   192   HRS   456   0   1     HIGH TEMP OP LIFE   1035   DS18520   FJ157931AB 125C, 5.5 VOLTS   1000   HRS   480   0   1   1   0   1     HIGH TEMP OP LIFE   1035   DS1856   WM158219A 125C, 5.5 VOLTS   1000   HRS   77   0   1   1   1   1   1   0   1	i	LATCH-UP V	1036	DS1721 DS1721	FJ158187AC	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C	Total:		6	0 0 0	
HIGH TEMP OP LIFE 0720 DS1851 QK707606BB 125C, 5.5 VOLTS 192 HRS 77 0   HIGH TEMP OP LIFE 0948 DS1856 WM049367A 125C, 5.5 VOLTS 1000 HRS 77 1 40023508   HIGH TEMP OP LIFE 1021 DS1804 WD049849A 125C, 5.5 VOLTS 192 HRS 45 0   HIGH TEMP OP LIFE 1035 DS18520 FJ157931AB 125C, 5.5 VOLTS 1000 HRS 80 0   HIGH TEMP OP LIFE 1050 DS1856 WM158219A 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1050 DS1856 WM158219A 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1050 DS1856 FJ162135DB 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000		OPERATING LIFE	1036	DS1721 DS1721	FJ158187AC	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C	Total:		6	0 0 0	
HIGH TEMP OP LIFE0948DS1856WM049367A125C, 5.5 VOLTS1000HRS77140023508HIGH TEMP OP LIFE1021DS1804WD049849A125C, 5.5 VOLTS192HRS450HIGH TEMP OP LIFE1035DS18S20FJ157931AB125C, 5.5 VOLTS1000HRS800HIGH TEMP OP LIFE1050DS1856WM158219A125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1050DS1856WM158219A125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162135DB125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162076CC125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1103DS18520FD162367AC125C, 5.5 VOLTS1000HRS800HIGH TEMP OP LIFE1113DS18520FD166067AB125C, 5.5 VOLTS1000HRS800	•	OPERATING LIFE DESCRIPTION	1036 1036 DATE	DS1721 DS1721 CODE/PRODUCT/	FJ158187AC FJ158187AC	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C CONDITION	Total:	DPOIN	6 6 QTY	0 0 0 FAILS	FA#
HIGH TEMP OP LIFE1021DS1804WD049849A 125C, 5.5 VOLTS192HRS450HIGH TEMP OP LIFE1035DS18S20FJ157931AB 125C, 5.5 VOLTS1000HRS800HIGH TEMP OP LIFE1050DS1856WM158219A 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1050DS1856WM158219A 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162135DB 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162076CC 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1103DS18S20FD162076CC 125C, 5.5 VOLTS1000HRS800HIGH TEMP OP LIFE1113DS18S20FD166067AB 125C, 5.5 VOLTS1000HRS800		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE	1036 1036 <b>DATE</b> 0720	DS1721 DS1721 CODE/PRODUCT/ DS1851	FJ158187AC FJ158187AC LOT QK707606BB	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C CONDITION 125C, 5.5 VOLTS	Total: REAL	DPOIN HRS	6 6 <b>QTY</b> 77	0 0 <b>0</b> FAILS 0	FA#
HIGH TEMP OP LIFE 1035 DS18S20 FJ157931AB 125C, 5.5 VOLTS 1000 HRS 80 0   HIGH TEMP OP LIFE 1050 DS1856 WM158219A 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1050 DS1856 WM158219A 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162135DB 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162135DB 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1103 DS18520 FD162367AC 125C, 5.5 VOLTS 1000 HRS 80 0		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	<b>DATE</b> 0720 0948	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856	FJ158187AC FJ158187AC LOT QK707606BB WM049367A	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C <b>CONDITION</b> 125C, 5.5 VOLTS 125C, 5.5 VOLTS	<b>Total:</b> <b>REAL</b> 192 1000	DPOIN HRS HRS	6 6 <b>QTY</b> 77 77	0 0 <b>FAILS</b> 0 1 4002	<b>FA#</b> 23508
HIGH TEMP OP LIFE1050DS1856WM158219A 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1050DS1856WM158219A 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162135DB 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162135DB 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162076CC 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162076CC 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1103DS18S20FD162367AC 125C, 5.5 VOLTS1000HRS800HIGH TEMP OP LIFE1113DS18S20FD166067AB 125C, 5.5 VOLTS1000HRS800		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	1036 1036 <b>DATE</b> 0720 0948 1021	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1804	FJ158187AC FJ158187AC LOT QK707606BB WM049367A WD049849A	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C <b>CONDITION</b> 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS	<b>Total:</b> <b>REAL</b> 192 1000 192	DPOIN HRS HRS HRS	6 6 QTY 77 77 45	0 0 <b>FAILS</b> 0 1 4002 0	<b>FA#</b> 23508
HIGH TEMP OP LIFE1050DS1856WM158219A 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162135DB 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162135DB 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162076CC 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1052DS1856FJ162076CC 125C, 5.5 VOLTS1000HRS770HIGH TEMP OP LIFE1103DS18520FD162367AC 125C, 5.5 VOLTS1000HRS800HIGH TEMP OP LIFE1113DS18S20FD166067AB 125C, 5.5 VOLTS1000HRS800		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE HIGH TEMP OP LIFE	<b>DATE</b> 0720 0948 1021 1035	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1804 DS18S20	FJ158187AC FJ158187AC LOT QK707606BB WM049367A WD049849A FJ157931AB	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C CONDITION 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS	<b>Total:</b> <b>REAL</b> 192 1000 192 1000	DPOIN HRS HRS HRS HRS HRS	6 6 <b>QTY</b> 77 77 45 80	0 0 <b>FAILS</b> 0 1 4002 0 0	<b>FA#</b> 23508
HIGH TEMP OP LIFE 1052 DS1856 FJ162135DB 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162135DB 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1103 DS18S20 FD162367AC 125C, 5.5 VOLTS 1000 HRS 80 0   HIGH TEMP OP LIFE 1113 DS18S20 FD166067AB 125C, 5.5 VOLTS 1000 HRS 80 0		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE HIGH TEMP OP LIFE HIGH TEMP OP LIFE HIGH TEMP OP LIFE	1036 1036 0720 0948 1021 1035 1050	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1804 DS18520 DS1856	FJ158187AC FJ158187AC QK707606BB WM049367A WD049849A FJ157931AB WM158219A	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C <b>CONDITION</b> 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS	<b>Total:</b> 192 1000 192 1000 1000	DPOIN HRS HRS HRS HRS HRS	6 6 <b>QTY</b> 77 77 45 80 77	0 0 <b>FAILS</b> 0 1 4002 0 0	<b>FA#</b> 23508
HIGH TEMP OP LIFE 1052 DS1856 FJ162135DB 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1103 DS18S20 FD162367AC 125C, 5.5 VOLTS 1000 HRS 80 0   HIGH TEMP OP LIFE 1113 DS18S20 FD166067AB 125C, 5.5 VOLTS 1000 HRS 80 0		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	<b>DATE</b> 0720 0948 1021 1035 1050 1050	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1804 DS18520 DS1856 DS1856	FJ158187AC FJ158187AC QK707606BB WM049367A WD049849A FJ157931AB WM158219A WM158219A	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C <b>CONDITION</b> 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS 125C, 5.5 VOLTS	<b>Total:</b> 192 1000 192 1000 1000 1000	DPOIN HRS HRS HRS HRS HRS HRS	6 6 77 77 45 80 77 77	0 0 <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b> <b>7</b>	<b>FA#</b> 23508
HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1103 DS18S20 FD162367AC 125C, 5.5 VOLTS 1000 HRS 80 0   HIGH TEMP OP LIFE 1113 DS18S20 FD166067AB 125C, 5.5 VOLTS 1000 HRS 80 0		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	DATE 0720 0948 1021 1035 1050 1050 1052	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1804 DS1856 DS1856 DS1856 DS1856	FJ158187AC FJ158187AC QK707606BB WM049367A WD049849A FJ157931AB WM158219A WM158219A FJ162135DB	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C <b>CONDITION</b> 125C, 5.5 VOLTS 125C, 5.5 VOLTS	<b>Total:</b> 192 1000 192 1000 1000 1000	PPOIN HRS HRS HRS HRS HRS HRS HRS	6 6 77 77 45 80 77 77 77 77	0 0 <b>FAILS</b> 0 1 4002 0 0 0 0	<b>FA#</b> 23508
HIGH TEMP OP LIFE 1052 DS1856 FJ162076CC 125C, 5.5 VOLTS 1000 HRS 77 0   HIGH TEMP OP LIFE 1103 DS18S20 FD162367AC 125C, 5.5 VOLTS 1000 HRS 80 0   HIGH TEMP OP LIFE 1113 DS18S20 FD166067AB 125C, 5.5 VOLTS 1000 HRS 80 0		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	<b>DATE</b> 0720 0948 1021 1035 1050 1052 1052	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856	FJ158187AC FJ158187AC QK707606BB WM049367A WD049849A FJ157931AB WM158219A WM158219A FJ162135DB FJ162135DB	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C <b>CONDITION</b> 125C, 5.5 VOLTS 125C, 5.5 VOLTS	<b>Total:</b> 192 1000 192 1000 1000 1000 1000	PPOIN HRS HRS HRS HRS HRS HRS HRS	6 6 77 77 45 80 77 77 77 77 77	0 0 <b>7</b> <b>FAILS</b> 0 1 4002 0 0 0 0 0 0 0 0	<b>FA#</b> 23508
HIGH TEMP OP LIFE 1103 DS18S20 FD162367AC 125C, 5.5 VOLTS 1000 HRS 80 0   HIGH TEMP OP LIFE 1113 DS18S20 FD166067AB 125C, 5.5 VOLTS 1000 HRS 80 0		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	<b>DATE</b> 0720 0948 1021 1035 1050 1052 1052	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856	FJ158187AC FJ158187AC QK707606BB WM049367A WD049849A FJ157931AB WM158219A WM158219A FJ162135DB FJ162135DB FJ162076CC	JESD78A, I-TEST 125C JESD78A, V-SUPPLY TEST 125C <b>CONDITION</b> 125C, 5.5 VOLTS 125C, 5.5 VOLTS	Total: REAL 192 1000 192 1000 1000 1000 1000 1000	POIN HRS HRS HRS HRS HRS HRS HRS HRS HRS	6 6 7 7 7 7 4 5 80 77 77 77 77 77 77	0 0 <b>FAILS</b> 0 1 4002 0 0 0 0 0 0 0 0	<b>FA#</b> 23508
HIGH TEMP OP LIFE 1113 DS18S20 FD166067AB 125C, 5.5 VOLTS 1000 HRS 80 0		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	DATE 0720 0948 1021 1035 1050 1052 1052 1052 1052	DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856	FJ158187AC FJ158187AC QK707606BB WM049367A WD049849A FJ157931AB WM158219A WM158219A FJ162135DB FJ162135DB FJ162076CC FJ162076CC	JESD/8A, I-TEST 125C   JESD/8A, V-SUPPLY   TEST 125C   CONDITION   125C, 5.5 VOLTS   125C, 5.5 VOLTS	<b>Total:</b> 192 1000 192 1000 1000 1000 1000 1000 1	PPOIN HRS HRS HRS HRS HRS HRS HRS HRS HRS	6 6 77 77 45 80 77 77 77 77 77 77 77 77	0 0 <b>7</b> <b>FAILS</b> 0 1 4002 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<b>FA#</b> 23508
		OPERATING LIFE DESCRIPTION HIGH TEMP OP LIFE HIGH TEMP OP LIFE	DATE 0720 0948 1021 1035 1050 1052 1052 1052 1052 1052 1052	DS1721 DS1721 DS1721 CODE/PRODUCT/ DS1851 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856 DS1856	FJ158187AC FJ158187AC QK707606BB WM049367A WD049849A FJ157931AB WM158219A WM158219A FJ162135DB FJ162135DB FJ162076CC FJ162076CC FD162367AC	JESD/8A, I-TEST 125C   JESD/8A, V-SUPPLY   TEST 125C   CONDITION   125C, 5.5 VOLTS   125C, 5.5 VOLTS	Total: 192 1000 192 1000 1000 1000 1000 1000 1	POIN HRS HRS HRS HRS HRS HRS HRS HRS HRS HRS	6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0 0 <b>FAILS</b> 0 1 4002 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<b>FA#</b> 23508

	D	EVICE HOURS:	916418895	FAILS:	1			
FAILURE RATE:		MTTF (YRS):	51730	FITS:	2.2			
					Total:			1
HIGH TEMP OP LIFE	1138	DS18S20	FD271756AB 125C	, 5.5 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1128	DS18S20	FH167920AB 125C	, 5.5 VOLTS	1000	HRS	80	0
HIGH TEMP OP LIFE	1113	DS3911	ZJ167332AB- 125C	, 5.5 VOLTS	192	HRS	48	0

The DS1731 is generically qualified by the DS1721.