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PRODUCT RELIABILITY REPORT
FOR

DS26519, Rev A2

Maxim Integrated Products

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Conclusion:

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

DS26519, Rev A2

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.

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.)

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):**	**16216**	**FITS:**	**7.0**
QUANTITY:	**138**	**DEVICE HOURS:**	**138000**	**FAILS:**	**0**

Only data from Operating Life or similar stresses are used for this calculation.

The parameters used to calculate this failure rate are as follows:

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

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:

Process:	TSMC Fab8B 0.18um Logic General Purpose 1P6M Salicide 1.8V/3.3V, Phase II
Passivation:	Laser/TEOS Ox - Pass/Nit -PreLP+GenLP
Die Size:	473 x 475
Number of Transistors:	5600000
Interconnect:	Aluminum / 0.5% Copper
Gate Oxide Thickness:	32 Å

ELECTRICAL CHARACTERIZATION

DESCRIPTION	DATE CODE/PRODUCT/LOT		CONDITION	READPOIN		QTY	FAILS	FA#
ESD SENSITIVITY	0647	**DS26519** QN062959BF	EOS/ESD S5.1 HBM 500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0647	**DS26519** QN062959BF	EOS/ESD S5.1 HBM 1000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0647	**DS26519** QN062959BF	EOS/ESD S5.1 HBM 2000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0647	**DS26519** QN062959BF	EOS/ESD S5.1 HBM 4000 VOLTS	1	PUL'S	3	2	No FA
LATCH-UP	0647	**DS26519** QN062959BF	JESD78, I-TEST 125C			6	0	
LATCH-UP	0647	**DS26519** QN062959BF	JESD78, V-SUPPLY TEST 125C			6	0	
ESD SENSITIVITY	0720	**DS26519** QN076204B	EOS/ESD S5.1 HBM 500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0720	**DS26519** QN076204B	EOS/ESD S5.1 HBM 1000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0720	**DS26519** QN076204B	EOS/ESD S5.1 HBM 2000 VOLTS	1	PUL'S	3	0	

LATCH-UP	0720	**DS26519**	QN076204B	JESD78, I-TEST 125C		6	0
LATCH-UP	0720	**DS26519**	QN076204B	JESD78, V-SUPPLY TEST 125C		6	0
					Total:		**2**

OPERATING LIFE

DESCRIPTION	**DATE CODE/PRODUCT/LOT**			**CONDITION**	**READPOIN**	**QTY**	**FAILS**	**FA#**
HIGH TEMP OP LIFE	0647	**DS26519**	QN062959BF	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	
HIGH TEMP OP LIFE	0709	**DS26519**	QN062959AB	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	48	0	
HIGH TEMP OP LIFE	0720	**DS26519**	QN076204B	125C, 2.0V (PSB) & 3.5V (PSA)	1000 HRS	45	0	
					Total:		**0**	