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PRODUCT RELIABILITY REPORT
FOR

DS75LV, Rev A3

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
fax: 972-371-6016

Conclusion:

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

DS75LV, Rev A3

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):**	**597648**	**FITS:**	**0.2**
	DEVICE HOURS:	**4797142531**	**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: 3.7** **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:

Process:	E35MN-2P3M,NTC,DSD,PDESD,PDRES,CAP,ENPN,DPT,HTO,No Zero mas
Passivation:	TEOS Ox-Nit 2-Mask Laser/Pass for E35WM; Full BEOL at SA; PT only in Dallas
Die Size:	47 x 61
Number of Transistors:	10937
Interconnect:	Aluminum / 0.5% Copper
Gate Oxide Thickness:	120 Å

ELECTRICAL CHARACTERIZATION

DESCRIPTION	DATE CODE/PRODUCT/LOT		CONDITION	READPOIN		QTY	FAILS	FA#
ESD SENSITIVITY	0606 **DS75LV**	QJ550643AB	EOS/ESD S5.1 HBM 500 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0606 **DS75LV**	QJ550643AB	EOS/ESD S5.1 HBM 1000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0606 **DS75LV**	QJ550643AB	EOS/ESD S5.1 HBM 2000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0606 **DS75LV**	QJ550643AB	EOS/ESD S5.1 HBM 3000 VOLTS	1	PUL'S	3	0	
ESD SENSITIVITY	0606 **DS75LV**	QJ550643AB	EOS/ESD S5.1 HBM 4000 VOLTS	1	PUL'S	3	0	
LATCH-UP	0606 **DS75LV**	QJ550643AB	JESD78, I-TEST 125C			6	0	
LATCH-UP	0606 **DS75LV**	QJ550643AB	JESD78, V-SUPPLY TEST 125C			6	0	
				Total:			**0**	

OPERATING LIFE

DESCRIPTION	DATE CODE/PRODUCT/LOT	CONDITION	READPOIN	QTY	FAILS	FA#

HIGH TEMP OP LIFE	0451	DS600	ZK451743AD	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0515	DS2745	QD522919AB	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0531	AS07	DGQ0EAS07	135C, 5.0 V	1000	HRS	77	0
HIGH TEMP OP LIFE	0536	DS2781	QK544612AB	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0538	DS2704	QJ602601BB	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0541	DS1388	QE549630BA	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0543	DS3610	QK547625AA	125C, 3.6 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0601	MAXQ3210	QM605087A	125C, 5.5 VOLTS	2000	HRS	77	0
HIGH TEMP OP LIFE	0601	DS3908	QE614607AB	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0602	DS2705	QD603639B	125C, 5.5 V (PSA) & 0.0 V (PSB)	1000	HRS	77	0
HIGH TEMP OP LIFE	0604	DS3988	QN608640BB	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0606	**DS75LV**	QJ550643AB	125C, 3.7 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0613	MAXQ3210	QM614274A	125C, 5.5 VOLTS	2000	HRS	77	0
HIGH TEMP OP LIFE	0617	DS4420	QJ633620BB	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0617	DS3600	QK606610C	125C, 3.6 VOLTS	1000	HRS	45	0
HIGH VOLTAGE LIFE	0618	DP20	DRI0CA006Q	135C, 5.0 V	1000	HRS	45	0
HIGH VOLTAGE LIFE	0618	DP20	DRI0CA006Q	135C, 5.0 V	1000	HRS	45	0
HIGH VOLTAGE LIFE	0618	DP20	DRI0CA006Q	135C, 5.0 V	1000	HRS	45	0
HIGH TEMP OP LIFE	0618	DS2746	QJ626604BB	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0620	DS28CZ04	QJ621627BA	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0622	DS3882	QK620606BB	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0624	DS4305	QM633621A	125C, 5.5 VOLTS	192	HRS	72	0
HIGH TEMP OP LIFE	0624	DS28CM00	QM614606A	125C, 5.25 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0626	DS1863	QM623600B	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0629	DS2745	QD635241B	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0629	DS620	QK632616AC	125C, 3.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0629	DS28E01	QE634087BA	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0632	DS3640	QK645634BA	125C, 3.6V (PSA) & 3.9V (PSB)	1000	HRS	45	0
HIGH TEMP OP LIFE	0640	DS2756	QK621609AB	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0642	DS3988	QN623590AE	125C, 5.5 VOLTS	2000	HRS	77	0
HIGH TEMP OP LIFE	0642	DS2786	QJ652645AC	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0651	DS3641	QK630613AD	125C, 3.6 VOLTS	1000	HRS	45	0

HIGH TEMP OP LIFE	0702	DS1865	QJ631615AB	125C, 5.5 VOLTS	192	HRS	77	0
HIGH TEMP OP LIFE	0705	DS28DG02	QJ713161AB	125C, 3.6 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0711	DS28CN01	QJ715648AB	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0711	DS3650	QK647632AE	125C, 3.0V (PSB) & 3.6V (PSA)	1000	HRS	45	0
HIGH TEMP OP LIFE	0713	DS3994	VK644633AA	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0713	DS75LX	QD708619BA	125C, 3.7 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0715	DS3605	QK726201BI-	125C, 3.6 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0715	MAXQ3100	QK711410BA	125C, 3.6 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0717	DS28EC20	QE730627AD	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0717	DS2704R	QJ733633AE	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0719	DS1091L	QJ721459AD	125C, 3.6 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0719	DS1091L	QJ721459AD	125C, 3.6 VOLTS	1000	HRS	32	0
HIGH TEMP OP LIFE	0723	DS2786	QJ801005BA	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0727	DS2781	QK738184BB	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0730	DS3991	QM737645B	125C, 5.5V (PSA) & 3.0V (PSB)	1000	HRS	45	0
HIGH TEMP OP LIFE	0732	DS1099	IJ611604AF	125C, 5.5 VOLTS	408	HRS	45	0
HIGH TEMP OP LIFE	0732	DS1099	IJ611604AF	125C, 5.5 VOLTS	408	HRS	32	0
HIGH TEMP OP LIFE	0736	DS2788	QK718177C	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0744	DS2745	QD801003AB	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0745	DS1099	VD736413AC	125C, 5.5 VOLTS	240	HRS	45	0
HIGH TEMP OP LIFE	0746	DS7505	QJ805646BC	125C, 3.7 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0747	DS2431	QK736694CA	125C, 4.0 VOLTS	2000	HRS	77	0
HIGH TEMP OP LIFE	0747	DS3655	QS709624AB	125C, 3.6V (PSA) & 3.0V (PSB)	1000	HRS	45	0
HIGH TEMP OP LIFE	0749	DS2782	QK753345AE	125C, 5.5 VOLTS	1000	HRS	75	0
HIGH TEMP OP LIFE	0801	DS2431	QK743689BA	125C, 4.0 VOLTS	2000	HRS	77	0
HIGH TEMP OP LIFE	0802	DS2431	QK811608BA	125C, 4.0 VOLTS	2000	HRS	77	0
HIGH TEMP OP LIFE	0804	DS2780	QK752167AD	125C, 5.5 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0804	DS4424	QJ804645AC	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0810	DS1875	QJ751639AA	125C, 5.5 VOLTS	192	HRS	77	0
HIGH TEMP OP LIFE	0822	MAX17041	QJ839631BD	125C, 5.5V (PSA) & 9.2V (PSB)	192	HRS	45	0

HIGH TEMP OP LIFE	0824	DS2786B	QJ840008BC	125C, 5.5 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0824	MAX7456	DXI0EA008	100C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0825	DS1190	QJ834631AB	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0825	DS1190	QJ834631AB	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0827	DS3610	QK813039AB	125C, 3.6 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0830	DS3645	QC845089A	125C, 3.6V (PSA) & 3.3V (PSB)	1000	HRS	45	0
HIGH TEMP OP LIFE	0832	DS2776	QJ823626BC	125C, 8.4V (PSB) & 4.2V (PSA)	192	HRS	77	0
HIGH TEMP OP LIFE	0836	DS2432	QH740152A	125C, 5.25 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0836	DS2432	QH740152AB	125C, 5.25 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0836	DS2432	QH740152A	125C, 5.25 VOLTS	1000	HRS	45	0
HIGH TEMP OP LIFE	0842	DS1190	VJ841633AD	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0842	DS1190	VJ841633AD	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0843	DS4426	QJ908643DC	125C, 5.5V (PSA) & 3.9V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0844	DS4432	QJ907640CB	125C, 5.5V (PSA) & 3.0V (PSB)	1000	HRS	45	0
HIGH TEMP OP LIFE	0845	DS2431	WJ943331AB	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0845	DS2431	WJ943238Q	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0846	DS28EC20	WJ941331D	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0846	DS28EC20	WJ942984PB	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0846	DS28EC20	WJ943330BB	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0846	DS28EC20	WJ942984PB	125C, 5.25 VOLTS	408	HRS	80	0
HIGH TEMP OP LIFE	0848	DS2431	WJ943235BB	125C, 5.25 VOLTS	1000	HRS	77	0
HIGH TEMP OP LIFE	0902	DS1190	VJ907367BA	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0902	DS1190	VJ907367BA	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0903	DS1190	VJ913332BA	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0903	DS1190	VJ913332BA	125C, 4.0V (PSA) & 6.0V (PSB)	192	HRS	45	0
HIGH TEMP OP LIFE	0903	MAX7456	DXI0EA010A	100C, 6.0 VOLTS	192	HRS	77	0
HIGH TEMP OP LIFE	0920	DS1874	QJ851637BA	125C, 5.5 VOLTS	192	HRS	77	0
					Total:			**0**

FAILURE RATE:	**MTTF (YRS):**	**597648**	**FITS:**	**0.2**
	DEVICE HOURS:	**4797142531**	**FAILS:**	**0**