



4/8/2009

**RELIABILITY MONITOR REPORT
FOR**

DAL B8 Silicon Gate CMOS

MAXIM Integrated Products

**120 San Gabriel Dr.
Sunnyvale, CA 94086**

**This Report was prepared by
Maxim Reliability Engineering**

Summary:

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor. The specific products in this process monitor are:

| | | | |
|--------|--------|--------|--------|
| DS2413 | DS3510 | DS8007 | DS8113 |
|--------|--------|--------|--------|

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 37719** **FITS: 3.0**

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

Cf: 60% **Ea: 0.7** **Tu: 25 °C**

The reliability data follows and in this section is the detailed reliability data by stress. The reliability data section includes the latest data available. This report covers data between 7/1/2007 and 6/30/2008 .

Process Information:

Process Description: DAL B8 Silicon Gate CMOS

OPERATING LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-------------------|-----------|--------------|-----------------|-----------|----------|----------|----------------|
| HIGH TEMP OP LIFE | 0724 | DS8007 | 125C, 6.0 VOLTS | 1000 HRS | 45 | 0 | QN616349BAA |
| HIGH TEMP OP LIFE | 0740 | DS8007 | 125C, 6.0 VOLTS | 1000 HRS | 77 | 0 | QN824614BBA |
| HIGH TEMP OP LIFE | 0740 | DS8007 | 125C, 6.0 VOLTS | 1000 HRS | 77 | 0 | XN716349CAC |
| HIGH TEMP OP LIFE | 0744 | DS8113 | 125C, 6.0 VOLTS | 1000 HRS | 45 | 0 | QK732036AB |
| HIGH TEMP OP LIFE | 0750 | DS8007 | 125C, 6.0 VOLTS | 1000 HRS | 77 | 0 | QN824614AB-NPI |
| Total: | | | | | | 0 | |

STORAGE LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|---------------|-----------|--------------|-----------|-----------|----------|----------|----------------|
| STORAGE LIFE | 0740 | DS8007 | 150C | 1000 HRS | 77 | 0 | QN824614BBA |
| STORAGE LIFE | 0740 | DS8007 | 150C | 1000 HRS | 77 | 0 | XN716349CAC |
| STORAGE LIFE | 0750 | DS8007 | 150C | 1000 HRS | 77 | 0 | QN824614AB-NPI |
| Total: | | | | | | 0 | |

TEMPERATURE CYCLE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|--------------------------------|-----------|--------------|---------------------------|-----------|----------|-------|-------------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0740 | DS8007 | -65C TO 150C | 1000 CYS | 77 | 0 | QN824614BBA |
| BOND STRENGTH | 0740 | DS8007 | MIL-STD-883-2011 : COND D | 40 WIRES | 5 | 0 | QN824614BBA |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0740 | DS8007 | -65C TO 150C | 1000 CYS | 77 | 0 | XN716349CAC |
| BOND STRENGTH | 0740 | DS8007 | MIL-STD-883-2011 : COND D | 40 WIRES | 5 | 0 | XN716349CAC |

| | | | | | | | | |
|--------------------------------|------|--------|---------------------------|------|-------|----|----------|----------------|
| BOND STRENGTH | 0750 | DS8007 | MIL-STD-883-2011 : COND D | 40 | WIRES | 5 | 0 | QN824614AB-NPI |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0750 | DS8007 | -65C TO 150C | 1000 | CYS | 77 | 0 | QN824614AB-NPI |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0821 | DS2413 | -55C TO 125C | 2000 | CYS | 77 | 0 | QJ816087AEA |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0821 | DS2413 | -55C TO 125C | 2000 | CYS | 77 | 0 | QJ821113AEA |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0821 | DS2413 | -55C TO 125C | 1000 | CYS | 77 | 0 | QJ823334ACA |
| Total: | | | | | | | 0 | |

TEMPERATURE HUMIDITY BIAS

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. | |
|---------------|-----------|--------------|--------------------|-----------|----------|-------|----------|----------------|
| HAST | 0740 | DS8007 | 130C, 85%R.H.,5.5V | 96 | HRS | 77 | 0 | QN824614BBA |
| HAST | 0740 | DS8007 | 130C, 85%R.H.,5.5V | 96 | HRS | 77 | 0 | XN716349CAC |
| HAST | 0750 | DS8007 | 130C, 85%R.H.,5.5V | 96 | HRS | 77 | 0 | QN824614AB-NPI |
| HAST | 0821 | DS2413 | 130C, 85%R.H.,3.5V | 96 | HRS | 45 | 0 | QJ816087AEA |
| HAST | 0821 | DS2413 | 130C, 85%R.H.,3.5V | 96 | HRS | 45 | 0 | QJ821113AEA |
| HAST | 0821 | DS2413 | 130C, 85%R.H.,3.5V | 96 | HRS | 45 | 0 | QJ823334ACA |
| Total: | | | | | | | 0 | |

UNBIASED MOISTURE RESISTANCE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. | |
|---------------|-----------|--------------|-----------------------------|-----------|----------|-------|----------|----------------|
| AUTOCLAVE | 0740 | DS8007 | 121C, 2 ATM STEAM, UNBIASED | 168 | HRS | 76 | 0 | QN824614BBA |
| AUTOCLAVE | 0740 | DS8007 | 121C, 2 ATM STEAM, UNBIASED | 168 | HRS | 76 | 0 | XN716349CAC |
| AUTOCLAVE | 0750 | DS8007 | 121C, 2 ATM STEAM, UNBIASED | 168 | HRS | 76 | 0 | QN824614AB-NPI |
| Total: | | | | | | | 0 | |

W/E ENDURANCE AND DATA RET'N

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. | |
|---------------------------|-----------|--------------|--------------------------------|-----------|----------|-------|----------|----------------|
| WRITE CYCLE STRESS (KCYS) | 0750 | DS3510 | 70 C, 5.5V (PSA) & 15.0V (PSB) | 50 | KCYS | 77 | 0 | QJ712635CA-NPI |
| STORAGE LIFE | 0750 | DS3510 | 150C | 1000 | HRS | 77 | 0 | QJ712635CA-NPI |
| Total: | | | | | | | 0 | |

FAILURE RATE:

MTTF (YRS): 37719

FITS: 3.0