



5/9/2009

**RELIABILITY MONITOR REPORT
FOR**

X3 0.6 μ m 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:

| | | | | |
|--------------|-------------|--------------|--------------|--------------|
| MAX1037EKA+ | MAX1139MEEE | MAX11503EUA+ | MAX11508UUD | MAX11509UUD |
| MAX1308ECM+ | MAX1312ECM+ | MAX1313ECM+ | MAX1379ATP | MAX3001EEBP+ |
| MAX4791EUK+ | MAX5048BAUT | MAX5383EZT+ | MAX5383EZT+T | MAX6737XKTG |
| MAX6864UK31 | MAX7474EAE+ | MAX9722AETE+ | MAX9722AEUE | MAX9776ETJ+ |
| MAX9789AETJ+ | NMAX1068BCE | | | |

The calculated failure rate for devices using this process is:

FAILURE RATE: **MTTF (YRS): 108546** **FITS: 1.1**

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 1/1/2008 and 12/31/2008.

Process Information:

Process Description: X3 0.6µm Silicon Gate CMOS

OPERATING LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-------------------|-----------|---------------|-----------|-----------|----------|----------|-------------|
| HIGH TEMP OP LIFE | 0734 | MAX1037EKA+ | 135C | 192 HRS | 50 | 0 | S1Q1HA025AQ |
| HIGH TEMP OP LIFE | 0742 | MAX7474EAE+ | 135C | 192 HRS | 55 | 0 | SR00CA007AQ |
| HIGH TEMP OP LIFE | 0750 | MAX11503EUA+ | 135C | 192 HRS | 55 | 0 | SHEZAQ001BQ |
| HIGH TEMP OP LIFE | 0805 | MAX9722AETE+ | 135C | 1000 HRS | 47 | 0 | SIY0JQ001A |
| HIGH TEMP OP LIFE | 0807 | MAX9789AETJ+ | 135C | 1000 HRS | 80 | 0 | SZ00GA346E |
| HIGH TEMP OP LIFE | 0810 | MAX1379ATP | 135C | 192 HRS | 48 | 0 | SWH1DQ001BQ |
| HIGH TEMP OP LIFE | 0816 | MAX5383EZT+ | 135C | 1000 HRS | 50 | 0 | S3JAEA004Q1 |
| HIGH TEMP OP LIFE | 0816 | MAX5383EZT+ | 135C | 1000 HRS | 50 | 0 | S3JAEA004Q2 |
| HIGH TEMP OP LIFE | 0816 | MAX5383EZT+ | 135C | 1000 HRS | 50 | 0 | S3JAEA004Q3 |
| HIGH TEMP OP LIFE | 0818 | MAX11509UUD+ | 135C | 192 HRS | 48 | 0 | SNBYBQ001DQ |
| HIGH TEMP OP LIFE | 0818 | MAX11508UUD+ | 135C | 192 HRS | 50 | 0 | SNBZBQ001CQ |
| HIGH TEMP OP LIFE | 0818 | MAX5383EZT+T | 135C | 1000 HRS | 50 | 0 | S3JAEA004Q4 |
| HIGH TEMP OP LIFE | 0818 | MAX5383EZT+T | 135C | 1000 HRS | 49 | 0 | S3JAEA004Q5 |
| HIGH TEMP OP LIFE | 0818 | MAX5383EZT+T | 135C | 1000 HRS | 50 | 0 | S3JAEA004Q6 |
| HIGH TEMP OP LIFE | 0819 | NMAX1068BCEG+ | 135C | 192 HRS | 48 | 0 | SJ50EQ003AQ |
| HIGH TEMP OP LIFE | 0834 | MAX9776ETJ+ | 135C | 1000 HRS | 80 | 0 | ST61EA246BA |
| Total: | | | | | | 0 | |

STORAGE LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-------------|-----------|--------------|-----------|-----------|----------|-------|---------|
|-------------|-----------|--------------|-----------|-----------|----------|-------|---------|

| | | | | | | | | |
|---------------|------|-----------------|------|------|-----|----|----------|--------------|
| STORAGE LIFE | 0621 | MAX1139MEEE+ | 150C | 1000 | HRS | 45 | 0 | SHT4AQ001B# |
| STORAGE LIFE | 0622 | MAX6864UK31D3S+ | 150C | 1000 | HRS | 80 | 0 | SFJ0DQ002D# |
| STORAGE LIFE | 0730 | MAX1308ECM+ | 150C | 1000 | HRS | 45 | 0 | SHG1GQ002A# |
| STORAGE LIFE | 0751 | MAX4791EUK+T | 150C | 1000 | HRS | 45 | 0 | SKG2FA014A# |
| STORAGE LIFE | 0751 | MAX6737XKTGD3+T | 150C | 500 | HRS | 78 | 0 | SC711EA011Q1 |
| STORAGE LIFE | 0751 | MAX6737XKTGD3+T | 150C | 1000 | HRS | 78 | 0 | SC71EA011Q1 |
| STORAGE LIFE | 0751 | MAX6737XKTGD3+T | 150C | 500 | HRS | 78 | 0 | SC711EA011Q2 |
| STORAGE LIFE | 0751 | MAX6737XKTGD3+T | 150C | 1000 | HRS | 78 | 0 | SC71EA011Q2 |
| STORAGE LIFE | 0751 | MAX6737XKTGD3+T | 150C | 500 | HRS | 78 | 0 | SC711EA011Q3 |
| STORAGE LIFE | 0751 | MAX6737XKTGD3+T | 150C | 1000 | HRS | 77 | 0 | SC71EA011Q3 |
| STORAGE LIFE | 0805 | MAX9722AETE+ | 150C | 1000 | HRS | 80 | 0 | SIY0JQ001A |
| STORAGE LIFE | 0818 | MAX5383EZT+T | 150C | 1000 | HRS | 80 | 0 | S3JAEA004Q4 |
| STORAGE LIFE | 0831 | MAX9789AETJ+ | 150C | 1000 | HRS | 80 | 0 | SZ00G429B# |
| STORAGE LIFE | 0834 | MAX9776ETJ+ | 150C | 1000 | HRS | 80 | 0 | ST61EA246BA |
| Total: | | | | | | | 0 | |

TEMPERATURE CYCLE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|--------------------------------|-----------|-----------------|--------------|-----------|----------|-------|-----------------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0621 | MAX1139MEEE+ | -65C TO 150C | 1000 | CYS | 80 | 0 SHT4AQ001B# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0642 | MAX5048BAUT#G16 | -65C TO 150C | 1000 | CYS | 310 | 0 SH71EA008BA |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0714 | MAX5048BAUT#G16 | -65C TO 150C | 1000 | CYS | 2271 | 0 SH71EA026AA |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0730 | MAX9722AEUE+ | -65C TO 150C | 1000 | CYS | 77 | 0 SIY0HA144C#B# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0736 | MAX9722AEUE+ | -65C TO 150C | 1000 | CYS | 77 | 0 SIY0IA176B# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0738 | MAX9789AETJ+ | -65C TO 150C | 1000 | CYS | 998 | 0 SZ00EA206A |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0741 | MAX9722AEUE+ | -65C TO 150C | 1000 | CYS | 77 | 0 SIY0IA179B# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0747 | MAX1313ECM+ | -65C TO 150C | 1000 | CYS | 80 | 0 SHG2GQ002D# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0751 | MAX1312ECM+ | -65C TO 150C | 1000 | CYS | 80 | 0 SHG2GQ002F# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0751 | MAX4791EUK+T | -65C TO 150C | 1000 | CYS | 80 | 0 SKG2FA014A# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0751 | MAX6737XKTGD3+T | -65C TO 150C | 1000 | CYS | 77 | 0 SC711EA011Q1 |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0751 | MAX6737XKTGD3+T | -65C TO 150C | 1000 | CYS | 77 | 0 SC711EA011Q2 |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0751 | MAX6737XKTGD3+T | -65C TO 150C | 1000 | CYS | 77 | 0 SC711EA011Q3 |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0752 | MAX9789AETJ+ | -65C TO 150C | 1000 | CYS | 983 | 0 SZ00EA286A |

| | | | | | | | | |
|---------------------------------|------|-----------------|---------------|------|-----|-----|---|-------------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0804 | MAX5048BAUT#G16 | -65C TO 150C | 1000 | CYS | 660 | 0 | SH71EA032AA |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0805 | MAX9722AETE+ | -65C TO 150C | 1000 | CYS | 80 | 0 | SIY0JQ001A |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0818 | MAX5383EZT+T | -65C TO 150C | 1000 | CYS | 12 | 0 | S3JAEA004Q4 |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0818 | MAX5383EZT+T | -65C TO 150C | 1000 | CYS | 79 | 0 | S3JAEA004Q5 |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0818 | MAX5383EZT+T | -65C TO 150C | 1000 | CYS | 80 | 0 | S3JAEA004Q6 |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0831 | MAX9789AETJ+ | -65C TO 150C | 500 | CYS | 80 | 0 | SZ00GA429B# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 0834 | MAX9776ETJ+ | -65C TO 150C | 950 | CYS | 80 | 0 | ST61EA246BA |
| TEMP CYCLE, 15' RAMP, 15' DWELL | N/A | MAX3001EEBP+T | -40C TO +125C | 500 | CYS | 77 | 0 | SKJ1FA054E |
| TEMP CYCLE, 15' RAMP, 15' DWELL | N/A | MAX3001EEBP+T | -40C TO +125C | 500 | CYS | 77 | 0 | SKJ1FA054J |
| TEMP CYCLE, 15' RAMP, 15' DWELL | N/A | MAX3001EEBP+T | -40C TO +125C | 1000 | CYS | 77 | 0 | SKJ1FA054V |

Total: **0**

FAILURE RATE: **MTTF (YRS): 108546** **FITS: 1.1**