

10/23/2014



**RELIABILITY MONITOR REPORT
FOR**

MFN 1.2 μ m Silicon Gate (B12)

MAXIM INTEGRATED

**160 RIO ROBLES
SAN JOSE, CA 95134**

**This Report was prepared by
MAXIM INTEGRATED 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:

| | | |
|--------------|-------------|--------------|
| MAX6008AEUR/ | MAX6166AESA | MAX669EUB/V+ |
|--------------|-------------|--------------|

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 50076 QUANTITY: 606 FAILS: 0 FITS: 2.3

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 10/1/2013 and 9/30/2014 .

Process Information:

Process Description: MFN 1.2µm Silicon Gate (B12)

OPERATING LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-------------------|-----------|----------------|-----------|-----------|----------|----------|-------------|
| HIGH TEMP OP LIFE | 1308 | MAX6008AEUR/V+ | 135°C | 192 HRS | 80 | 0 | R26737AL1 |
| HIGH TEMP OP LIFE | 1344 | MAX6166AESA+ | 135°C | 1000 HRS | 26 | 0 | JXE0CA032PG |
| HIGH TEMP OP LIFE | 1344 | MAX6166AESA+ | 135°C | 1000 HRS | 26 | 0 | JXE0CA032PH |
| HIGH TEMP OP LIFE | 1344 | MAX6166AESA+ | 135°C | 500 HRS | 26 | 0 | JXE0CA032PI |
| HIGH TEMP OP LIFE | 1344 | MAX6166AESA+ | 135°C | 1000 HRS | 26 | 0 | JXE0CA032CC |
| HIGH TEMP OP LIFE | 1345 | MAX6008AEUR/V+ | 135°C | 192 HRS | 80 | 0 | JAKM9Q003H# |
| HIGH TEMP OP LIFE | 1345 | MAX6008AEUR/V+ | 135°C | 192 HRS | 79 | 0 | JAKM9A005D# |
| HIGH TEMP OP LIFE | 1352 | MAX669EUB/V+ | 135°C | 192 HRS | 79 | 0 | JYGBLA088C# |
| HIGH TEMP OP LIFE | 1352 | MAX669EUB/V+ | 135°C | 192 HRS | 80 | 0 | JYGBLA089G# |
| HIGH TEMP OP LIFE | 1403 | MAX6166AESA+ | 135°C | 500 HRS | 26 | 0 | JXE0CA033CC |
| HIGH TEMP OP LIFE | 1403 | MAX6166AESA+ | 135°C | 1000 HRS | 26 | 0 | JXE0CA033AD |
| HIGH TEMP OP LIFE | 1403 | MAX6166AESA+ | 135°C | 1000 HRS | 26 | 0 | JXE0CA033FD |
| HIGH TEMP OP LIFE | 1409 | MAX6166AESA+ | 135°C | 1000 HRS | 26 | 0 | JXE0CA037MB |
| Total: | | | | | | 0 | |

STORAGE LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|--------------|-----------|----------------|-----------|-----------|----------|-------|-------------|
| STORAGE LIFE | 1308 | MAX6008AEUR/V+ | 150°C | 500 HRS | 50 | 0 | JAKM9Q001DB |
| STORAGE LIFE | 1344 | MAX6166AESA+ | 150°C | 1000 HRS | 77 | 0 | JXE0CA032PG |
| STORAGE LIFE | 1344 | MAX6166AESA+ | 150°C | 1000 HRS | 77 | 0 | JXE0CA032PH |
| STORAGE LIFE | 1344 | MAX6166AESA+ | 150°C | 1000 HRS | 77 | 0 | JXE0CA032PI |
| STORAGE LIFE | 1344 | MAX6166AESA+ | 150°C | 1000 HRS | 77 | 0 | JXE0CA033CC |

| | | | | | | | |
|---------------|------|--------------|-------|----------|----|----------|-------------|
| STORAGE LIFE | 1344 | MAX6166AESA+ | 150°C | 1000 HRS | 77 | 0 | JXE0CA033AD |
| STORAGE LIFE | 1344 | MAX6166AESA+ | 150°C | 1000 HRS | 77 | 0 | JXE0CA033AF |
| STORAGE LIFE | 1352 | MAX669EUB/V+ | 150°C | 500 HRS | 47 | 0 | JYGBLA088C# |
| STORAGE LIFE | 1409 | MAX6166AESA+ | 150°C | 1000 HRS | 77 | 0 | JXE0CA037MB |
| Total: | | | | | | 0 | |

TEMPERATURE CYCLE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|--------------------------------|-----------|----------------|--------------------------------|-----------|----------|----------|-------------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1344 | MAX6166AESA+ | -65C TO +150C (Condition C) | 1000 CYS | 77 | 0 | JXE0CA032PG |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1344 | MAX6166AESA+ | -65C TO +150C (Condition C) | 1000 CYS | 77 | 0 | JXE0CA032PH |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1344 | MAX6166AESA+ | -65C TO +150C (Condition C) | 1000 CYS | 77 | 0 | JXE0CA032PI |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1344 | MAX6166AESA+ | -65C TO +150C (Condition C) | 525 CYS | 77 | 0 | JXE0CA033AF |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1345 | MAX6008AEUR/V+ | -65C TO +150C (Condition C) | 500 CYS | 80 | 0 | JAKM9Q003H# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1345 | MAX6008AEUR/V+ | -65C TO +150C (Condition C) | 500 CYS | 80 | 0 | JAKM9A005D# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1352 | MAX669EUB/V+ | -65C TO +150C (Condition C) | 500 CYS | 80 | 0 | JYGBLA088C# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1352 | MAX669EUB/V+ | -65C TO +150C (Condition C) | 500 CYS | 80 | 0 | JYGBLA089G# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1352 | MAX669EUB/V+ | -65C TO +150C (Condition C) | 500 CYS | 80 | 0 | JYGBLA090D# |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1403 | MAX6166AESA+ | -65C TO +150C (Condition C) | 1000 CYS | 77 | 0 | JXE0CA033CC |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1403 | MAX6166AESA+ | -65C TO +150C (Condition C) | 1000 CYS | 77 | 0 | JXE0CA033AD |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1403 | MAX6166AESA+ | -65C TO +150C (Condition C) | 1000 CYS | 77 | 0 | JXE0CA033FD |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1409 | MAX6166AESA+ | -65C TO +150C (Condition C) | 1000 CYS | 77 | 0 | JXE0CA037MB |
| Total: | | | | | | 0 | |

TEMPERATURE HUMIDITY BIAS

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-----------------|-----------|--------------|----------------|-----------|----------|-------|-------------|
| BIASED MOISTURE | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 100 HRS | 45 | 0 | JXE0CA032PH |

| | | | | | | | | | |
|-----------------|------|----------------|-------------------|-----|-----|----|----------|-------------|--|
| BIASED MOISTURE | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 100 | HRS | 45 | 0 | JXE0CA032PI | |
| BIASED MOISTURE | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 100 | HRS | 45 | 0 | JXE0CA033CC | |
| BIASED MOISTURE | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 100 | HRS | 45 | 0 | JXE0CA033AD | |
| BIASED MOISTURE | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 100 | HRS | 45 | 0 | JXE0CA033AF | |
| BIASED MOISTURE | 1345 | MAX6008AEUR/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JAKM9Q003H# | |
| BIASED MOISTURE | 1345 | MAX6008AEUR/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JAKM9A005D# | |
| BIASED MOISTURE | 1352 | MAX669EUB/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JYGBLA088C# | |
| BIASED MOISTURE | 1352 | MAX669EUB/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JYGBLA089G# | |
| BIASED MOISTURE | 1352 | MAX669EUB/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JYGBLA090D# | |
| BIASED MOISTURE | 1409 | MAX6166AESA+ | 130C, 85% R.H. | 100 | HRS | 45 | 0 | JXE0CA037MB | |
| Total: | | | | | | | 0 | | |

UNBIASED MOISTURE RESISTANCE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. | |
|---------------|-----------|----------------|-------------------|-----------|----------|-------|----------|-------------|
| MOISTURE SOAK | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 392 | HRS | 45 | 0 | JXE0CA032PG |
| MOISTURE SOAK | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 392 | HRS | 45 | 0 | JXE0CA032PH |
| MOISTURE SOAK | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 392 | HRS | 45 | 0 | JXE0CA032PI |
| MOISTURE SOAK | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 400 | HRS | 77 | 0 | JXE0CA033CC |
| MOISTURE SOAK | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 400 | HRS | 77 | 0 | JXE0CA033AD |
| MOISTURE SOAK | 1344 | MAX6166AESA+ | 130C, 85% R.H. | 400 | HRS | 77 | 0 | JXE0CA033AF |
| MOISTURE SOAK | 1345 | MAX6008AEUR/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JAKM9Q003H# |
| MOISTURE SOAK | 1345 | MAX6008AEUR/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JAKM9A005D# |
| MOISTURE SOAK | 1352 | MAX669EUB/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JYGBLA088C# |
| MOISTURE SOAK | 1352 | MAX669EUB/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JYGBLA089G# |
| MOISTURE SOAK | 1352 | MAX669EUB/V+ | 130C, 85% R.H. | 100 | HRS | 80 | 0 | JYGBLA090D# |
| MOISTURE SOAK | 1409 | MAX6166AESA+ | 130C, 85% R.H. | 400 | HRS | 45 | 0 | JXE0CA037MB |
| Total: | | | | | | | 0 | |

FAILURE RATE: MTTF (YRS): 50076 QUANTITY: 606 FAILS: 0 FITS: 2.3