

4/16/2014



**RELIABILITY MONITOR REPORT
FOR**

X3 50μm-diameter-TSV process (TSV)

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:

| | |
|-------------|-------------|
| MAX44247AUA | MAX8975QEWC |
|-------------|-------------|

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 31373 QUANTITY: 318 FAILS: 0 FITS: 3.6

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 4/1/2013 and 3/31/2014 .

Process Information:

Process Description: X3 50µm-diameter-TSV process (TSV)

OPERATING LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-------------------|-----------|--------------|-----------|-----------|----------|----------|-------------|
| HIGH TEMP OP LIFE | 1230 | MAX44247AUA+ | 135°C | 1000 HRS | 79 | 0 | SAEU2Q001AB |
| HIGH TEMP OP LIFE | 1233 | MAX44247AUA+ | 135°C | 1000 HRS | 80 | 0 | SAEU2A004B |
| HIGH TEMP OP LIFE | 1331 | MAX8975QEWC+ | 135°C | 1000 HRS | 80 | 0 | SAMI5Q008A# |
| HIGH TEMP OP LIFE | 1351 | MAX8975QEWC+ | 135°C | 1000 HRS | 79 | 0 | SAMI5Q007B# |
| Total: | | | | | | 0 | |

STORAGE LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|---------------|-----------|--------------|-----------|-----------|----------|----------|-------------|
| STORAGE LIFE | 1331 | MAX8975QEWC+ | 150°C | 1000 HRS | 80 | 1 | SAMI5Q008A# |
| STORAGE LIFE | 1351 | MAX8975QEWC+ | 150°C | 1000 HRS | 80 | 0 | SAMI5Q007B# |
| Total: | | | | | | 1 | |

TEMPERATURE CYCLE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|--------------------------------|-----------|--------------|--------------|-----------|----------|-------|-------------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1230 | MAX44247AUA+ | -65C TO 150C | 1000 CYS | 80 | 0 | R26037AT1 |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1230 | MAX44247AUA+ | -65C TO 150C | 1000 CYS | 80 | 0 | SAEU2Q001AB |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1233 | MAX44247AUA+ | -65C TO 150C | 500 CYS | 80 | 0 | SAEU2A003AE |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1233 | MAX44247AUA+ | -65C TO 150C | 1000 CYS | 78 | 0 | SAEU2Q003AE |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1233 | MAX44247AUA+ | -65C TO 150C | 1000 CYS | 80 | 0 | SAEU2A004BE |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1233 | MAX44247AUA+ | -65C TO 150C | 1000 CYS | 80 | 0 | SAEU2Q001AE |

| | | | | | | | | |
|------------------------------------|------|--------------|---------------|------|-----|----|----------|-------------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1233 | MAX44247AUA+ | -65C TO 150C | 1000 | CYS | 80 | 0 | SAEU2Q001BE |
| TEMP CYCLE, 15' RAMP, 15' DWELL | 1331 | MAX8975QEWC+ | -40C TO +125C | 1000 | CYS | 80 | 0 | SAMI5Q008A# |
| TEMP CYCLE, 15' RAMP, 15' DWELL | 1351 | MAX8975QEWC+ | -40C TO +125C | 1000 | CYS | 80 | 0 | SAMI5Q007B# |
| Total: | | | | | | | 0 | |

UNBIASED MOISTURE RESISTANCE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|---------------|--------------|-----------------|-------------------|-----------|----------|-------|---------------|
| MOISTURE SOAK | 1331 | MAX8975QEWC+ | 130C, 85% R.H. | 500 | HRS | 80 | 0 SAMI5Q008A# |
| MOISTURE SOAK | 1331 | MAX8975QEWC+ | 85 C/85% R.H. | 1000 | HRS | 80 | 0 SAMI5Q008A# |
| MOISTURE SOAK | 1351 | MAX8975QEWC+ | 130C, 85% R.H. | 1000 | HRS | 80 | 0 SAMI5Q007B# |

Total: 0

FAILURE RATE: MTF (YRS): 31373 QUANTITY: 318 FAILS: 0 FITS: 3.6