

8/1/2019



**RELIABILITY MONITOR REPORT
FOR**

Epson S4

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:

| | | | | |
|--------------|--------------|-------------|-------------|-------------|
| MAX1358BETL+ | MAX15038ETG+ | MAX16833CAU | MAX8556ETE+ | MAX8904ETN+ |
|--------------|--------------|-------------|-------------|-------------|

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 55034 QUANTITY: 284 FAILS: 0 FITS: 2.1

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 4/1/2019 and 8/1/2019 .

Process Information:

Process Description: Epson S4

OPERATING LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-------------------|-----------|-------------------|-----------|-----------|----------|----------|-------------|
| HIGH TEMP OP LIFE | 1822 | MAX15038ETG+ | 125°C | 1000 HRS | 48 | 0 | EBKL4A043EX |
| HIGH TEMP OP LIFE | 1827 | MAX1358BETL+ | 125°C | 1000 HRS | 80 | 0 | EMJZEA134CX |
| HIGH TEMP OP LIFE | 1848 | MAX8556ETE+ | 125°C | 1000 HRS | 80 | 0 | EBLZ8A054AX |
| HIGH TEMP OP LIFE | 1905 | MAX16833CAUE/V+QA | 125°C | 1000 HRS | 76 | 0 | EBQS7A065CX |
| Total: | | | | | | 0 | |

STORAGE LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|---------------|-----------|-------------------|-----------|-----------|----------|----------|-------------|
| STORAGE LIFE | 1822 | MAX15038ETG+ | 150°C | 1000 HRS | 80 | 0 | EBKL4A043EX |
| STORAGE LIFE | 1827 | MAX1358BETL+ | 150°C | 1000 HRS | 80 | 0 | EMJZEA134CX |
| STORAGE LIFE | 1905 | MAX16833CAUE/V+QA | 150°C | 1000 HRS | 80 | 0 | EBQS7A065CX |
| Total: | | | | | | 0 | |

TEMPERATURE CYCLE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|--------------------------------|-----------|-------------------|-----------------------------|-----------|----------|-------|-------------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1822 | MAX15038ETG+ | -65C TO +150C (Condition C) | 1000 CYS | 80 | 0 | EBKL4A043EX |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1827 | MAX1358BETL+ | -65C TO +150C (Condition C) | 1000 CYS | 80 | 0 | EMJZEA134CX |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1848 | MAX8556ETE+ | -65C TO +150C (Condition C) | 1000 CYS | 80 | 0 | EBLZ8A054AX |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1905 | MAX16833CAUE/V+QA | -65C TO +150C (Condition C) | 1000 CYS | 80 | 0 | EBQS7A065CX |

Total: 0

TEMPERATURE HUMIDITY BIAS

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | LOT NO. |
|-----------------|--------------|-------------------|----------------|-----------|----------|-------|-------------|
| BIASED MOISTURE | | MAX8904ETN+GC5 | 130C, 85% R.H. | 96 HRS | 24 | 0 | EBOQ5A030AA |
| BIASED MOISTURE | 1808 | MAX8904ETN+GC5 | 130C, 85% R.H. | 96 HRS | 24 | 0 | EBOQ5A030AA |
| BIASED MOISTURE | 1808 | MAX8904ETN+GC5 | 130C, 85% R.H. | 96 HRS | 20 | 0 | EBOQ5A030AA |
| BIASED MOISTURE | 1827 | MAX1358BETL+ | 130C, 85% R.H. | 96 HRS | 80 | 0 | EMJZEA134CX |
| BIASED MOISTURE | 1848 | MAX8556ETE+ | 130C, 85% R.H. | 96 HRS | 80 | 0 | EBLZ8A054AX |
| MOISTURE SOAK | 1905 | MAX16833CAUE/V+QA | 130C, 85% R.H. | 96 CYS | 96 | 0 | EBQS7A065CX |

Total: 0

FAILURE RATE: MTTF (YRS): 55034 QUANTITY: 284 FAILS: 0 FITS: 2.1