

10/23/2014



RELIABILITY MONITOR REPORT  
FOR

**LGA Package**

**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 Package Reliability Monitor. The specific assemblies included in this package monitor are:

| ASSY SITE    | PINS | PACKAGE       |                |                     |
|--------------|------|---------------|----------------|---------------------|
| ASE Chung-Li | 28   | LGA (Pb-Free) | ASEK-BMP/ASEK- | 60 LGA-FC (Pb-Free) |

The calculated failure rate for this assembly is:

**FAILURE RATE: MTTF (YRS): 36249 FITS: 3.1**

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

**Cf: 60% Ea: 0.7 Tu: 25 °C**

The reliability data follows. At the start of this data is a description of the assembly vehicle used to generate this reliability data. The next section is the detailed reliability data for each stress. The reliability data section includes the latest data available. This report covers data between 10/1/2013 and 9/30/2014.

**Assembly Information:**

Package Type: LGA (Pb-Free)  
Date Code Range: 1420 to 1420

**OPERATING LIFE**

| DESCRIPTION       | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS    | FA NO |
|-------------------|-----------|--------------|-----------|-----------|----------|----------|-------|
| HIGH TEMP OP LIFE | 1420      | MAX17515ALI+ | 135°C     | 500 HRS   | 80       | 1        |       |
| HIGH TEMP OP LIFE | 1420      | MAX17515ALI+ | 135°C     | 500 HRS   | 80       | 0        |       |
| HIGH TEMP OP LIFE | 1420      | MAX17515ALI+ | 135°C     | 500 HRS   | 80       | 0        |       |
| <b>Total:</b>     |           |              |           |           |          | <b>1</b> |       |

**Assembly Information:**

Package Type: LGA-FC (Pb-Free)  
Date Code Range: 1324 to 1325

**OPERATING LIFE**

| DESCRIPTION       | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS    | FA NO |
|-------------------|-----------|--------------|-----------|-----------|----------|----------|-------|
| HIGH TEMP OP LIFE | 1324      | MAX24101ELU+ | 135°C     | 1000 HRS  | 80       | 0        |       |
| HIGH TEMP OP LIFE | 1325      | MAX24101ELU+ | 135°C     | 1000 HRS  | 79       | 0        |       |
| HIGH TEMP OP LIFE | 1325      | MAX24101ELU+ | 135°C     | 192 HRS   | 80       | 0        |       |
| HIGH TEMP OP LIFE | 1325      | MAX24101ELU+ | 135°C     | 500 HRS   | 79       | 0        |       |
| HIGH TEMP OP LIFE | 1325      | MAX24101ELU+ | 135°C     | 1000 HRS  | 79       | 0        |       |
| <b>Total:</b>     |           |              |           |           |          | <b>0</b> |       |

**STORAGE LIFE**

| DESCRIPTION   | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS    | FA NO |
|---------------|-----------|--------------|-----------|-----------|----------|----------|-------|
| STORAGE LIFE  | 1324      | MAX24101ELU+ | 150°C     | 1000 HRS  | 80       | 0        |       |
| STORAGE LIFE  | 1325      | MAX24101ELU+ | 150°C     | 1000 HRS  | 80       | 0        |       |
| STORAGE LIFE  | 1325      | MAX24101ELU+ | 150°C     | 1000 HRS  | 80       | 0        |       |
| <b>Total:</b> |           |              |           |           |          | <b>0</b> |       |

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**TEMPERATURE CYCLE**

| DESCRIPTION                    | DATE CODE | TEST VEHICLE | CONDITION                   | READPOINT     | QUANTITY | FAILS    | FA NO |
|--------------------------------|-----------|--------------|-----------------------------|---------------|----------|----------|-------|
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1324      | MAX24101ELU+ | -65C TO +150C (Condition C) | 1000 CYS      | 80       | 0        |       |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1325      | MAX24101ELU+ | -65C TO +150C (Condition C) | 1000 CYS      | 80       | 0        |       |
| TEMP CYCLE, 5' RAMP, 10' DWELL | 1325      | MAX24101ELU+ | -65C TO +150C (Condition C) | 1000 CYS      | 80       | 0        |       |
|                                |           |              |                             | <b>Total:</b> |          | <b>0</b> |       |

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**UNBIASED MOISTURE RESISTANCE**

| DESCRIPTION   | DATE CODE | TEST VEHICLE | CONDITION     | READPOINT     | QUANTITY | FAILS    | FA NO |
|---------------|-----------|--------------|---------------|---------------|----------|----------|-------|
| MOISTURE SOAK | 1324      | MAX24101ELU+ | 85 C/85% R.H. | 1000 HRS      | 48       | 0        |       |
| MOISTURE SOAK | 1325      | MAX24101ELU+ | 85 C/85% R.H. | 1000 HRS      | 47       | 0        |       |
| MOISTURE SOAK | 1325      | MAX24101ELU+ | 85 C/85% R.H. | 1000 HRS      | 48       | 0        |       |
|               |           |              |               | <b>Total:</b> |          | <b>0</b> |       |

**FAILURE RATE: MTTF (YRS): 36249 FITS: 3.1**