

1/24/2019



RELIABILITY MONITOR REPORT
FOR

BGA 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	121	CTBGA (Pb-Free)	ASE Kaoshiung	76 Flip Chip BGA
ATC (Amkor, China)	76	Flip Chip BGA	ATP (Amkor, PI)	76 Flip Chip BGA

Note: Due to the nature of the construction on this assembly, there is no operating life data collected.

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 10/1/2018 and 12/31/2018.

Assembly Information:

Package Type: CTBGA (Pb-Free)
 Flammability: UL 94-V0
 Date Code Range: 1801 to 1801

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	1801	87-32566+LNS	260C +0/-5C	3 PASS	350	0	
CONVECTION REFLOW	1801	87-32566+LNS	260C +0/-5C	3 PASS	350	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1801	87-32566+LNS	-65C TO +150C (Condition C)	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1801	87-32566+LNS	-65C TO +150C (Condition C)	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1801	87-32566+LNS	-65C TO +150C (Condition C)	500 CYS	80	0	
Total:						0	

Assembly Information:

Package Type: Flip Chip BGA
 Flammability: UL 94-V0
 Date Code Range: 1732 to 1804

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	1737	MAX20024C	260C +0/-5C GXXC/V+	3 PASS	110	0	
CONVECTION REFLOW	1738	MAX20024A	260C +0/-5C GXXG/V+	3 PASS	110	0	
CONVECTION REFLOW	1803	MAX20024A	260C +0/-5C GXXE/V+	3 PASS	200	0	

CONVECTION REFLOW	1803	MAX20024A	260C +0/-5C GXXE/V+	3	PASS	200	0
CONVECTION REFLOW	1803	MAX20024A	260C +0/-5C GXXE/V+	3	PASS	200	0
CONVECTION REFLOW	1803	MAX20024A	260C +0/-5C GXXE/V+	3	PASS	200	0
CONVECTION REFLOW	1804	MAX20024E	260C +0/-5C GXXD/V+	3	PASS	100	0
Total:							0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE		MAX20024A	150°C GXXE/V+	500 HRS	40	0	
STORAGE LIFE		MAX20024A	150°C GXXE/V+	500 HRS	40	0	
STORAGE LIFE		MAX20024A	150°C GXXE/V+	500 HRS	40	0	
Total:							0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 15' RAMP, 15' DWELL	1737	MAX20024A	-40C TO +125C (Condition G) GXXC/V+	100 CYS	1142	0	
TEMP CYCLE, 15' RAMP, 15' DWELL	1737	MAX20024C	-40C TO +125C (Condition G) GXXC/V+	100 CYS	100	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1738	MAX20024A	-65C TO +150C (Condition C) GXXC/V+	100 CYS	1167	0	
TEMP CYCLE, 15' RAMP, 15' DWELL	1738	MAX20024A	-40C TO +125C (Condition G) GXXG/V+	100 CYS	100	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	79	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	79	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX20024A	-65C TO +150C (Condition C) GXXE/V+	1000 CYS	80	0	
Total:							0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1732	MAX20024A	85 C/85% R.H. GXXG/V+	1000 HRS	79	0	

Total: 0