

1/24/2019



RELIABILITY MONITOR REPORT
FOR

QFP 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	48	TQFP (Pb-Free)	ASE Kaoshiung	48 LQFP (Pb-Free)
ASE Kaoshiung	63	LQFP (Pb-Free)	ASE Kaoshiung	64 LQFP (Pb-Free)
ASE Kaoshiung	100	TQFP (Pb-Free)	ASE Kaoshiung	144 TQFP (Pb-Free)
ATP (Amkor, PI)	44	LQFP (Pb-Free)		

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 56073 FITS: 2.0

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

Assembly Information:

Package Type: LQFP (Pb-Free)

Date Code Range: 1738 to 1828

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1738	MAX17823BGCB/V+ CV	135°C	1000 HRS	74	0	
HIGH TEMP OP LIFE	1826	MAX14802ECM+	125°C	1000 HRS	80	0	
Total:						0	

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	1738	MAX17823BGCB/V+ CV	260C +0/-5C	3 PASS	320	0	
CONVECTION REFLOW	1803	MAX14802ECM+	260C +0/-5C	PASS	320	0	
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1738	MAX17823BGCB/V+ CV	150°C	1000 HRS	80	0	
STORAGE LIFE	1803	MAX14802ECM+	150°C	1000 HRS	80	0	
STORAGE LIFE	1826	MAX14802ECM+	150°C	1000 HRS	80	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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TEMP CYCLE, 5' RAMP, 10' DWELL	1738	MAX17823BGCB/V+ CV	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1803	MAX14802ECM+	-65C TO +150C (Condition C)	1000	CYS	80	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1821	MAX17843ACB/V+	-65C TO +150C (Condition C)	500	CYS	680	0
TEMP CYCLE, 5' RAMP, 10' DWELL	1826	MAX14802ECM+	-65C TO +150C (Condition C)	1000	CYS	79	0
Total:						0	0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1738	MAX17823BGCB/V+ CV	85 C/85% R.H.	96	HRS	80	0
BIASED MOISTURE	1803	MAX14802ECM+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1826	MAX14802ECM+	130C, 85% R.H.	96	HRS	80	0
Total:						0	0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1828	DS2148T+	130C, 85% R.H.	96	HRS	80	0
Total:						0	0

Assembly Information:

Package Type: TQFP (Pb-Free)
Date Code Range: 1718 to 1803

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1718	87-A0430+RB8	135°C	1000	HRS	80	0
HIGH TEMP OP LIFE	1741	MAX3815CCM+	135°C	500	HRS	48	0
HIGH TEMP OP LIFE	1741	MAX3815CCM+	135°C	500	HRS	32	0
HIGH TEMP OP LIFE	1803	MAX32650GCE+	135°C	192	HRS	80	0
Total:						0	0

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	1741	MAX3815CCM+	260C +0/-5C	3	PASS	320	0
Total:						0	0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1741	MAX3815CCM+	150°C	1000	HRS	80	0
Total:						0	0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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TEMP CYCLE, 5' RAMP, 10' DWELL	1741	MAX3815CCM+	-65C TO +150C (Condition C)	1000	CYS	80	0
						Total:	0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	1718	87-A0430+RB8	85 C/85% R.H.	96	HRS	80	0
BIASED MOISTURE	1718	87-A0430+RB8	85 C/85% R.H.	96	HRS	80	0
BIASED MOISTURE	1741	MAX3815CCM+	85 C/85% R.H.	96	HRS	40	0
						Total:	0

FAILURE RATE: MTTF (YRS): 56073 FITS: 2.0