

6/25/2020



**RELIABILITY MONITOR REPORT
FOR**

SOT 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			
Carsem-M	3	SOT23 (Pb-Free)	Carsem-M	6	SOT23 (Pb-Free)
Cirtek	3	SOT23 (Pb-Free)	Cirtek	6	SOT23 (Pb-Free)
Cirtek	6	TSOC	MPOC	6	TSOC
UTL (NSEB) UTAC	5	SC70	UTL (NSEB) UTAC	3	SOT23 (Pb-Free)
UTL (NSEB) UTAC	5	SOT23 (Pb-Free)	UTL (NSEB) UTAC	8	SOT23 (Pb-Free)

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 95023 FITS: 1.2

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 1/1/2020 and 3/31/2020.

Assembly Information:

Package Type: SC70
Date Code Range: 2001 to 2001

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW	2001	MAX49140AXK/V+T		3	PASS	450	0
CONVECTION REFLOW	2001	MAX49140AXK/V+T		3	PASS	450	0
CONVECTION REFLOW	2001	MAX49140AXK/V+T		3	PASS	450	0
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	2001	MAX49140AXK/V+T	-65C TO +150C (Condition C)	500	CYS	90	0
TEMP CYCLE, 5' RAMP, 10' DWELL	2001	MAX49140AXK/V+T	-65C TO +150C (Condition C)	500	CYS	80	0
Total:						0	

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
BIASED MOISTURE	2001	MAX49140AXK/V+T	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	2001	MAX49140AXK/V+T	130C, 85% R.H.	96	HRS	79	0
BIASED MOISTURE	2001	MAX49140AXK/V+T	130C, 85% R.H.	96	HRS	80	0
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
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MOISTURE SOAK	2001	MAX49140AXK/V+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	2001	MAX49140AXK/V+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	2001	MAX49140AXK/V+T	130C, 85% R.H.	96	HRS	80	0
Total:							0

Assembly Information:

Package Type: SOT23 (Pb-Free)
Date Code Range: 1738 to 1934

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
HIGH TEMP OP LIFE	1738	LM4050BEX3-2.5+	125°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1804	MAX9050AEUK+T	125°C	192 HRS	80	0	
HIGH TEMP OP LIFE	1837	MAX16135HRB/V+T	125°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1850	MAX2640AUT+T	125°C	1000 HRS	79	0	
HIGH TEMP OP LIFE	1915	MAX6035BAUR50+T	125°C	1000 HRS	48	0	
HIGH TEMP OP LIFE	1915	MAX6035BAUR50+T	125°C	1000 HRS	31	0	
HIGH TEMP OP LIFE	1919	MAX6070BA12/V+TC SL	125°C	1000 HRS	80	0	
HIGH TEMP OP LIFE	1934	MAX809LEUR+T	125°C	1000 HRS	38	0	
HIGH TEMP OP LIFE	1934	MAX809LEUR+T	125°C	1000 HRS	39	0	
Total:							0

PACKAGE TESTS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
CONVECTION REFLOW		MAX6070BAUT12/V+ T	260C +0/-5C	3 PASS	500	0	
CONVECTION REFLOW	1804	MAX9050AEUK+T	260C +0/-5C	3 PASS	350	0	
CSAM	1836	MAX6070AAUT33/V+ T		1 PASS	22	0	
CONVECTION REFLOW	1836	MAX6070AAUT33/V+ T		3 PASS	297	0	
PHYSICAL DIMENSION	1836	MAX6070AAUT33/V+ T		1 PASS	10	0	
SOLDERABILITY	1836	MAX6070AAUT33/V+ T	130C, 85% R.H.	1 PASS	15	0	
BOND PULL	1836	MAX6070AAUT33/V+ T		1 PASS	10	0	
SOLDERABILITY	1836	MAX6070AAUT33/V+ T	JESD22-B102, COND C (245C)	1 PASS	15	0	
CONVECTION REFLOW	1847	LM4040AEM3-2.5+T	85 C/85% R.H.	3 PASS	316	0	
CONVECTION REFLOW	1915	MAX6035BAUR50+T	125°C	3 PASS	320	0	
CSAM	1919	MAX6070BA12/V+TC SL	150°C	1 PASS	22	0	
CONVECTION REFLOW	1919	MAX6070BA12/V+TC SL	130C, 85% R.H.	3 PASS	293	0	

PHYSICAL DIMENSION	1919	MAX6070BA12/V+TC SL	1	PASS	10	0
SOLDERABILITY	1919	MAX6070BA12/V+TC JESD22-B100 SL	1	PASS	15	0
BOND PULL	1919	MAX6070BA12/V+TC 130C, 85% R.H. SL	1	PASS	10	0
CSAM	1919	MAX6070BA12/V+TC > 5 GMS SL	1	PASS	22	0
CONVECTION REFLOW	1919	MAX6070BA12/V+TC 130C, 85% R.H. SL	3	PASS	336	0
PHYSICAL DIMENSION	1919	MAX6070BA12/V+TC SL	1	PASS	10	0
SOLDERABILITY	1919	MAX6070BA12/V+TC 130C, 85% R.H. SL	1	PASS	15	0
BOND PULL	1919	MAX6070BA12/V+TC JESD22-B102, COND C (245C) SL	1	PASS	10	0
CONVECTION REFLOW	1919	MAX33040EAKA+T 260C +0/-5C	3	PASS	348	0
CONVECTION REFLOW	1919	MAX33040EAKA+T 260C +0/-5C	3	PASS	348	0
CONVECTION REFLOW	1919	MAX33040EAKA+T 260C +0/-5C	3	PASS	350	0
Total:						0

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE		MAX6070BAUT12/V+ T	150°C	1000 HRS	80	0	
STORAGE LIFE	1804	MAX9050AEUK+T	150°C	1000 HRS	80	0	
STORAGE LIFE	1847	LM4040AEM3-2.5+T	150°C	1000 HRS	79	0	
STORAGE LIFE	1850	MAX2640AUT+T	150°C	1000 HRS	80	0	
STORAGE LIFE	1915	MAX6035BAUR50+T	150°C	1000 HRS	80	0	
STORAGE LIFE	1919	MAX33040EAKA+T	150°C	1000 HRS	80	0	
Total:						0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL		MAX6070BAUT12/V+ T	-65C TO +150C (Condition C)	1000 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1847	LM4040AEM3-2.5+T	-65C TO +150C (Condition C)	1000 CYS	77	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1850	MAX2640AUT+T	-65C TO +150C (Condition C)	500 CYS	80	0	
TEMP CYCLE, 5' RAMP, 10' DWELL	1915	MAX6035BAUR50+T	-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	1804	MAX9050AEUK+T	130C, 85% R.H.	96 HRS	80	0	
BIASED MOISTURE	1836	MAX6070AAUT33/V+ T	130C, 85% R.H.	96 HRS	79	0	

BIASED MOISTURE	1850	MAX2640AUT+T	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1915	MAX6035BAUR50+T	130C, 85% R.H.	96	HRS	40	0
BIASED MOISTURE	1915	MAX6035BAUR50+T	130C, 85% R.H.	96	HRS	40	0
BIASED MOISTURE	1919	MAX6070BA12/V+TC SL	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1919	MAX6070BA12/V+TC SL	130C, 85% R.H.	96	HRS	79	0
BIASED MOISTURE	1919	MAX33040EAKA+T	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1919	MAX33040EAKA+T	130C, 85% R.H.	96	HRS	73	0
Total:							0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
MOISTURE SOAK	1804	MAX9050AEUK+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1836	MAX6070AAUT33/V+ T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1847	LM4040AEM3-2.5+T	130C, 85% R.H.	96	HRS	75	0
MOISTURE SOAK	1919	MAX6070BA12/V+TC SL	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1919	MAX6070BA12/V+TC SL	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1919	MAX33040EAKA+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1919	MAX33040EAKA+T	130C, 85% R.H.	96	HRS	80	0
MOISTURE SOAK	1919	MAX33040EAKA+T	130C, 85% R.H.	96	HRS	80	0
Total:							0

Assembly Information:

Package Type: TSOC
Date Code Range: 1921 to 1937

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
STORAGE LIFE	1921	90-1230Y+07I/DS1230Y-70IND+	150°C	1000	HRS	80	0
STORAGE LIFE	1921	90-1230Y+07I/DS1230Y-70IND+	150°C	1000	HRS	80	0
STORAGE LIFE	1937	87-2432P+X01	150°C	1000	HRS	80	0
Total:							0

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	FA NO
TEMP CYCLE, 5' RAMP, 10' DWELL	1921	90-1230Y+07I/DS1230Y-70IND+	-65C TO +150C (Condition C)	1000	CYS	78	0

TEMP CYCLE, 5' RAMP, 10' DWELL	1921	90- 1230Y+07I/DS1230Y- 70IND+	-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	1921	90- 1230Y+07I/DS1230Y- 70IND+	130C, 85% R.H.	96	HRS	80	0
BIASED MOISTURE	1921	90- 1230Y+07I/DS1230Y- 70IND+	130C, 85% R.H.	96	HRS	80	0
						Total:	0

FAILURE RATE: MTTF (YRS): 95023 FITS: 1.2