

7/10/2017



**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:

MAX15038ETG+	MAX16065ETM	MAX16833CAU	MAX16907SATE	MAX17845ACB/
MAX1785EUU+	MAX5971BETI+	MAX8839EERE	MAX8839XERE	MAX8839XERE

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 110456 QUANTITY: 525 FAILS: 0 FITS: 1.0

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 4/1/2017 and 6/30/2017 .

Process Information:

Process Description: Epson S4

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	1611	MAX16065ETM+	135°C	1000 HRS	45	0	EAGS5A014L
HIGH TEMP OP LIFE	1611	MAX16065ETM+	135°C	1000 HRS	35	0	EAGS5A014L
HIGH TEMP OP LIFE	1618	MAX16833CAUE/V+	135°C	1000 HRS	78	0	EAOQ2A011A
HIGH TEMP OP LIFE	1618	MAX5971BETI+	135°C	1000 HRS	80	0	EAQK5A005A
HIGH TEMP OP LIFE	1620	MAX16065ETM+	135°C	1000 HRS	45	0	EAGS5A010S
HIGH TEMP OP LIFE	1620	MAX16065ETM+	135°C	1000 HRS	35	0	EAGS5A010S
HIGH TEMP OP LIFE	1631	MAX1785EUU+	135°C	1000 HRS	80	0	EK61LA106FG
HIGH TEMP OP LIFE	1650	MAX15038ETG+	135°C	1000 HRS	48	0	EBKL4Q001CX
HIGH TEMP OP LIFE	1707	MAX16907SATE/V+	135°C	1000 HRS	79	0	EBPH3Q001BC
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	1611	MAX16065ETM+	150°C	1000 HRS	80	0	EAGS5A014L
STORAGE LIFE	1614	MAX8839XEREE+T	150°C	1000 HRS	76	0	FQWZFA392G#
STORAGE LIFE	1617	MAX8839XEREE+	150°C	1000 HRS	77	0	FQWZFA395F#
STORAGE LIFE	1617	MAX8839EEREE+	150°C	1000 HRS	77	0	FQWZFA395G#
STORAGE LIFE	1617	MAX8839XEREE+	150°C	1000 HRS	77	0	FQWZFA395H#
STORAGE LIFE	1617	MAX8839XEREE+	150°C	1000 HRS	77	0	FQWZFA395F\$
STORAGE LIFE	1617	MAX8839EEREE+	150°C	1000 HRS	77	0	FQWZFA395G\$
STORAGE LIFE	1617	MAX8839XEREE+T	150°C	1000 HRS	77	0	FQWZFA395H\$

STORAGE LIFE	1618	MAX16833CAUE/V+	150°C	1000	HRS	79	0	EAOQ2A011A
STORAGE LIFE	1618	MAX16833CAUE/V+	150°C	1000	HRS	80	0	EAOQ2A011A
STORAGE LIFE	1618	MAX5971BETI+	150°C	1000	HRS	80	0	EAQK5A005A
STORAGE LIFE	1620	MAX16065ETM+	150°C	1000	HRS	80	0	EAGS5A010S
STORAGE LIFE	1631	MAX1785EUU+	150°C	1000	HRS	80	0	EK61LA106FG
STORAGE LIFE	1650	MAX15038ETG+	150°C	1000	HRS	80	0	EBKL4Q001CX
STORAGE LIFE	1707	MAX16907SATE/V+	150°C	1000	HRS	80	0	EBPH3Q001BC
STORAGE LIFE	1710	MAX17845ACB/V+CJT	150°C	1000	HRS	79	0	EBPA8Q001B
Total:							0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
TEMP CYCLE, 5' RAMP, 10' DWELL	1611	MAX16065ETM+	-65C TO +150C (Condition C)	500	CYS	80	0 EAGS5A014L
TEMP CYCLE, 15' RAMP, 15' DWELL	1617	MAX8839XEREE+	-40C TO +125C (Condition G)	1000	CYS	77	0 FQWZFA395F#
TEMP CYCLE, 15' RAMP, 15' DWELL	1617	MAX8839EEREE+	-40C TO +125C (Condition G)	1000	CYS	77	0 FQWZFA395G#
TEMP CYCLE, 15' RAMP, 15' DWELL	1617	MAX8839XEREE+	-40C TO +125C (Condition G)	1000	CYS	77	0 FQWZFA395H#
TEMP CYCLE, 15' RAMP, 15' DWELL	1617	MAX8839XEREE+	-40C TO +125C (Condition G)	1000	CYS	77	0 FQWZFA395F\$
TEMP CYCLE, 15' RAMP, 15' DWELL	1617	MAX8839EEREE+	-40C TO +125C (Condition G)	1000	CYS	77	0 FQWZFA395G\$
TEMP CYCLE, 15' RAMP, 15' DWELL	1617	MAX8839XEREE+T	-40C TO +125C (Condition G)	1000	CYS	77	0 FQWZFA395H\$
TEMP CYCLE, 5' RAMP, 10' DWELL	1618	MAX16833CAUE/V+	-65C TO +150C (Condition C)	1000	CYS	79	0 EAOQ2A011A
TEMP CYCLE, 5' RAMP, 10' DWELL	1618	MAX5971BETI+	-65C TO +150C (Condition C)	500	CYS	80	0 EAQK5A005A
TEMP CYCLE, 5' RAMP, 10' DWELL	1620	MAX16065ETM+	-65C TO +150C (Condition C)	1000	CYS	80	0 EAGS5A010S
TEMP CYCLE, 5' RAMP, 10' DWELL	1631	MAX1785EUU+	-65C TO +150C (Condition C)	1000	CYS	80	0 EK61LA106FG
TEMP CYCLE, 5' RAMP, 10' DWELL	1650	MAX15038ETG+	-65C TO +150C (Condition C)	1000	CYS	80	0 EBKL4Q001CX
TEMP CYCLE, 5' RAMP, 10' DWELL	1707	MAX16907SATE/V+	-65C TO +150C (Condition C)	1000	CYS	85	0 EBPH3Q001BC

TEMP CYCLE, 5' RAMP, 1710 MAX17845ACB/V+CJT -65C TO 1000 CYS 80 0 EBPA8Q001B
 10' DWELL +150C
 (Condition C)

Total: 0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
BIASED MOISTURE	1611	MAX16065ETM+	130C, 85%	100 HRS	80	0	EAGS5A014L
BIASED MOISTURE	1618	MAX16833CAUE/V+	130C, 85%	100 HRS	80	0	EAOQ2A011A
BIASED MOISTURE	1618	MAX16833CAUE/V+	130C, 85%	96 HRS	20	0	EAOQ2A011A
BIASED MOISTURE	1618	MAX5971BETI+	130C, 85%	100 HRS	80	0	EAQK5A005A
BIASED MOISTURE	1620	MAX16065ETM+	130C, 85%	96 HRS	80	0	EAGS5A010S
BIASED MOISTURE	1631	MAX1785EUU+	130C, 85%	96 HRS	80	0	EK61LA106FG
BIASED MOISTURE	1650	MAX15038ETG+	130C, 85%	96 HRS	80	0	EBKL4Q001CX
BIASED MOISTURE	1707	MAX16907SATE/V+	130C, 85%	96 HRS	37	0	EBPH3Q001BC
BIASED MOISTURE	1707	MAX16907SATE/V+	130C, 85%	96 HRS	10	0	EBGZ9A009E
BIASED MOISTURE	1710	MAX17845ACB/V+CJT	130C, 85%	96 HRS	80	0	EBPA8Q001B
Total:						0	

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
MOISTURE SOAK	1618	MAX16833CAUE/V+	130C, 85%	100 HRS	80	0	EAOQ2A011A
MOISTURE SOAK	1618	MAX5971BETI+	130C, 85%	96 HRS	80	0	EAQK5A005A
MOISTURE SOAK	1707	MAX16907SATE/V+	130C, 85%	96 HRS	80	0	EBPH3Q001BC
MOISTURE SOAK	1710	MAX17845ACB/V+CJT	130C, 85%	96 HRS	80	0	EBPA8Q001B
Total:						0	

FAILURE RATE: MTTF (YRS): 110456 QUANTITY: 525 FAILS: 0 FITS: 1.0