

4/23/2015



**RELIABILITY MONITOR REPORT
FOR**

Epson MBiC3 SiGe HBT 0.35μm (MB3)

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:

MAX2172ETL+	MAX2551ETN+	MAX2553ETN	MAX2659ELT+	MAX2659ELT+T
MAX2871ETJ+	MAX2880ETP+			

The calculated failure rate for devices using this process is:

FAILURE RATE: MTTF (YRS): 197233 QUANTITY: 1391 FAILS: 0 FITS: 0.6

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 4/1/2014 and 3/31/2015 .

Process Information:

Process Description: Epson MBI3 SiGe HBT 0.35µm (MB3)

OPERATING LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE	1314	MAX2553ETN+	135°C	1000 HRS	79	0	EAKP0A016BA
HIGH TEMP OP LIFE	1319	MAX2553ETN+	135°C	1000 HRS	77	0	EAKP0A008AA
HIGH TEMP OP LIFE	1346	MAX2880ETP+	135°C	240 HRS	80	0	EANF2Q001DQ
HIGH TEMP OP LIFE	1349	MAX2659ELT+T	135°C	1000 HRS	80	0	EAJL2A013Q1
HIGH TEMP OP LIFE	1349	MAX2659ELT+T	135°C	1000 HRS	80	0	EAJL2A013Q2
HIGH TEMP OP LIFE	1349	MAX2659ELT+T	135°C	1000 HRS	79	0	EAJL2A013Q3
HIGH TEMP OP LIFE	1404	MAX2172ETL+	135°C	500 HRS	80	0	EAKE62030BA
HIGH TEMP OP LIFE	1404	MAX2659ELT+T	135°C	500 HRS	79	0	EAJL22044AB
HIGH TEMP OP LIFE	1405	MAX2172ETL+	135°C	500 HRS	80	0	EAKE62029AA
HIGH TEMP OP LIFE	1416	MAX2659ELT+T	135°C	1000 HRS	80	0	EAJL2A0A0H
HIGH TEMP OP LIFE	1431	MAX2871ETJ+	135°C	192 HRS	80	0	EAUS6Q001BQ
HIGH TEMP OP LIFE	1433	MAX2659ELT+	135°C	1000 HRS	79	0	EAJL2A035Q1
HIGH TEMP OP LIFE	1433	MAX2659ELT+	135°C	1000 HRS	80	0	EAJL2A035Q2
HIGH TEMP OP LIFE	1433	MAX2659ELT+	135°C	1000 HRS	80	0	EAJL2A035Q3
HIGH TEMP OP LIFE	1439	MAX2880ETP+	135°C	712 HRS	79	0	EANF2Q003Q1
HIGH TEMP OP LIFE	1439	MAX2880ETP+	135°C	500 HRS	79	0	EANF2Q003Q2
HIGH TEMP OP LIFE	1446	MAX2551ETN+	135°C	500 HRS	60	0	ZX418300ACA
HIGH TEMP OP LIFE	1446	MAX2551ETN+	135°C	500 HRS	60	0	ZX418300AD
Total:						0	

STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE	1349	MAX2659ELT+T	150°C	1000 HRS	80	0	EAJL2A013Q1
STORAGE LIFE	1349	MAX2659ELT+T	150°C	1000 HRS	80	0	EAJL2A013Q2
STORAGE LIFE	1349	MAX2659ELT+T	150°C	1000 HRS	80	0	EAJL2A013Q3
STORAGE LIFE	1419	MAX2659ELT+T	150°C	1000 HRS	80	0	EAJL2A020H
STORAGE LIFE	1433	MAX2659ELT+	150°C	1000 HRS	79	0	EAJL2A035Q1
STORAGE LIFE	1433	MAX2659ELT+	150°C	1000 HRS	78	0	EAJL2A035Q2
STORAGE LIFE	1433	MAX2659ELT+	150°C	1000 HRS	79	0	EAJL2A035Q3
STORAGE LIFE	1439	MAX2880ETP+	150°C	1000 HRS	80	0	EANF2Q003Q1
STORAGE LIFE	1439	MAX2880ETP+	150°C	1000 HRS	80	0	EANF2Q003Q2
STORAGE LIFE	1439	MAX2880ETP+	150°C	1000 HRS	80	0	EANF2Q003Q3
				Total:		0	

TEMPERATURE CYCLE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
TEMP CYCLE, 5' RAMP, 10' DWELL	1349	MAX2659ELT+	-65C TO +150C (Condition C)	1000 CYS	250	0	EAJL2A013Q6
TEMP CYCLE, 5' RAMP, 10' DWELL	1349	MAX2659ELT+T	-65C TO +150C (Condition C)	1000 CYS	80	0	EAJL2A013Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	1349	MAX2659ELT+T	-65C TO +150C (Condition C)	1000 CYS	80	0	EAJL2A013Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	1349	MAX2659ELT+T	-65C TO +150C (Condition C)	1000 CYS	80	0	EAJL2A013Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1419	MAX2659ELT+T	-65C TO +150C (Condition C)	1000 CYS	80	0	EAJL2A020H
TEMP CYCLE, 5' RAMP, 10' DWELL	1433	MAX2659ELT+	-65C TO +150C (Condition C)	1000 CYS	80	0	EAJL2A035Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	1433	MAX2659ELT+	-65C TO +150C (Condition C)	1000 CYS	78	0	EAJL2A035Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	1433	MAX2659ELT+	-65C TO +150C (Condition C)	1000 CYS	80	0	EAJL2A035Q3
TEMP CYCLE, 5' RAMP, 10' DWELL	1439	MAX2880ETP+	-65C TO +150C (Condition C)	1000 CYS	78	0	EANF2Q003Q1
TEMP CYCLE, 5' RAMP, 10' DWELL	1439	MAX2880ETP+	-65C TO +150C (Condition C)	1000 CYS	80	0	EANF2Q003Q2
TEMP CYCLE, 5' RAMP, 10' DWELL	1439	MAX2880ETP+	-65C TO +150C (Condition C)	1000 CYS	80	0	EANF2Q003Q3

Total: 0

TEMPERATURE HUMIDITY BIAS

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
BIASED MOISTURE	1349	MAX2659ELT+T	130C, 85% R.H.	200 HRS	80	0	EAJL2A013Q1
BIASED MOISTURE	1349	MAX2659ELT+T	130C, 85% R.H.	200 HRS	80	0	EAJL2A013Q2
BIASED MOISTURE	1433	MAX2659ELT+	130C, 85% R.H.	100 HRS	80	0	EAJL2A035Q1
BIASED MOISTURE	1433	MAX2659ELT+	130C, 85% R.H.	200 HRS	80	0	EAJL2A035Q1
BIASED MOISTURE	1433	MAX2659ELT+	130C, 85% R.H.	100 HRS	80	0	EAJL2A035Q2
BIASED MOISTURE	1433	MAX2659ELT+	130C, 85% R.H.	200 HRS	79	0	EAJL2A035Q2
BIASED MOISTURE	1433	MAX2659ELT+	130C, 85% R.H.	200 HRS	79	0	EAJL2A035Q3

Total: 0

UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
MOISTURE SOAK	1349	MAX2659ELT+T	130C, 85% R.H.	300 HRS	80	0	EAJL2A013Q1
MOISTURE SOAK	1349	MAX2659ELT+T	130C, 85% R.H.	500 HRS	77	0	EAJL2A013Q1
MOISTURE SOAK	1349	MAX2659ELT+T	130C, 85% R.H.	300 HRS	80	0	EAJL2A013Q2
MOISTURE SOAK	1349	MAX2659ELT+T	130C, 85% R.H.	500 HRS	79	0	EAJL2A013Q2
MOISTURE SOAK	1349	MAX2659ELT+T	130C, 85% R.H.	300 HRS	80	0	EAJL2A013Q3
MOISTURE SOAK	1349	MAX2659ELT+T	130C, 85% R.H.	500 HRS	78	0	EAJL2A013Q3
MOISTURE SOAK	1433	MAX2659ELT+	130C, 85% R.H.	100 HRS	80	0	EAJL2A035Q1
MOISTURE SOAK	1433	MAX2659ELT+	130C, 85% R.H.	500 HRS	80	0	EAJL2A035Q1
MOISTURE SOAK	1433	MAX2659ELT+	130C, 85% R.H.	100 HRS	80	0	EAJL2A035Q2
MOISTURE SOAK	1433	MAX2659ELT+	130C, 85% R.H.	500 HRS	80	0	EAJL2A035Q2
MOISTURE SOAK	1433	MAX2659ELT+	130C, 85% R.H.	100 HRS	80	0	EAJL2A035Q3
MOISTURE SOAK	1433	MAX2659ELT+	130C, 85% R.H.	500 HRS	80	0	EAJL2A035Q3

Total: 0

FAILURE RATE: MTTF (YRS): 197233 QUANTITY: 1391 FAILS: 0 FITS: 0.6