

6/25/2020



**RELIABILITY MONITOR REPORT  
FOR**

**Fab 103 P90**

**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:

87-J779Z+X00	ENGAY17BTI+	MAX16604GFN+	MAX17662AATE	MAX17662BATE
MAX20000ATCB	MAX20410AFOB	MAX20779	MAX20780	MAX22999ATU+
MAX25605ATP/	MAX77501EWV	MAX77503EEW	MAX77511EWB	MAX77511SEW
MAX77705CEW	MAX77705FEW	MAX77705FEW	MAX77705FEW	MAX77711AEW
MAX77930EFV+	MAX77958EWV	MAX77964CEWJ	MAX77964EWJ+	MAX98937EWX
MAXQ699				

The calculated failure rate for devices using this process is:

**FAILURE RATE: MTTF (YRS): 407399 QUANTITY: 3097 FAILS: 0 FITS: 0.3**

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

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## Process Information:

Process Description: Fab 103 P90

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## OPERATING LIFE

DESCRIPTION	DATE	TEST CODE VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
HIGH TEMP OP LIFE		MAX17662AATE+	125°C	1000 HRS	79	0	CCAF0Q003D
HIGH TEMP OP LIFE		MAX77501EWV+T	125°C	500 HRS	48	0	CBZS3Q001A
HIGH TEMP OP LIFE	1732	MAXQ699	125°C	1000 HRS	80	0	CBSS9Z009 (ZX172712)
HIGH TEMP OP LIFE	1838	MAX16604GFN+	125°C	1000 HRS	78	0	GPB17369AA
HIGH TEMP OP LIFE	1838	MAX16604GFN+	125°C	500 HRS	40	0	GPB17369AA
HIGH TEMP OP LIFE	1846	MAX77930EFV+	125°C	96 HRS	48	0	CBZU2Q002A
HIGH TEMP OP LIFE	1846	MAX77930EFV+	125°C	192 HRS	78	0	CBZU2Q002A
HIGH TEMP OP LIFE	1846	MAX77930EFV+	125°C	1000 HRS	80	0	CBZU2Q003
HIGH TEMP OP LIFE	1846	MAX77930EFV+	125°C	500 HRS	80	0	CBZU2A004
HIGH TEMP OP LIFE	1847	MAX77503EEWC+T	125°C	1000 HRS	80	0	CCTX6Q002FM
HIGH TEMP OP LIFE	1849	MAX77503EEWC+T	125°C	1000 HRS	80	0	CCTX6Q002DC
HIGH TEMP OP LIFE	1849	MAX77503EEWC+T	125°C	1000 HRS	80	0	CCTX6Q002EJ
HIGH TEMP OP LIFE	1851	MAX20780	125°C	1000 HRS	79	0	ZOB00633AA-NPI
HIGH TEMP OP LIFE	1851	MAX20780	125°C	1000 HRS	80	0	ZOB00634AA-NPI
HIGH TEMP OP LIFE	1851	MAX20780	125°C	1000 HRS	79	0	ZOB00635AA-NPI
HIGH TEMP OP LIFE	1852	MAX20000ATCB/V+	125°C	750 HRS	79	0	CCUU4Q002CF
HIGH TEMP OP LIFE	1852	MAX20000ATCB/V+	125°C	192 HRS	80	0	CCUU4Q002CF

HIGH TEMP OP LIFE	1852	MAX20000ATCB/V+	125°C	192	HRS	80	0	CCUU4Q003CD
HIGH TEMP OP LIFE	1852	MAX20000ATCB/V+	125°C	192	HRS	79	0	CCUU4Q003CD
HIGH TEMP OP LIFE	1907	MAX77964EWJ+T	125°C	1000	HRS	80	0	CCBA3Q001D
HIGH TEMP OP LIFE	1907	MAX20000ATCB/V+	125°C	750	HRS	78	0	CCUU4Q001B/DA
HIGH TEMP OP LIFE	1907	MAX20000ATCB/V+	125°C	500	HRS	80	0	CCUU4Q001B/DA
HIGH TEMP OP LIFE	1910	MAX77964EWJ+T	125°C	1000	HRS	77	0	CCBA3Q002C
HIGH TEMP OP LIFE	1911	MAX17662AATE+	125°C	1000	HRS	78	0	CCAF0Q001E
HIGH TEMP OP LIFE	1911	MAX17662AATE+	125°C	1000	HRS	79	0	CCAF0Q002BA
HIGH TEMP OP LIFE	1912	MAX77964EWJ+T	125°C	192	HRS	80	0	CCBA3Q003G
HIGH TEMP OP LIFE	1912	MAX77964EWJ+T	125°C	1000	HRS	80	0	CCBA3Q003G
HIGH TEMP OP LIFE	1912	MAX77964EWJ+T	125°C	1000	HRS	45	0	CCBA3Q003F
HIGH TEMP OP LIFE	1912	MAX77964EWJ+T	125°C	1000	HRS	47	0	CCBA3Q003F
HIGH TEMP OP LIFE	1912	MAX77964EWJ+T	125°C	1000	HRS	33	0	CCBA3Q003F
HIGH TEMP OP LIFE	1912	MAX77964EWJ+T	125°C	1000	HRS	33	0	CCBA3Q003F
HIGH TEMP OP LIFE	1916	ENGAY17BTI+	125°C	192	HRS	80	0	CCBA0Z001A
HIGH TEMP OP LIFE	1921	MAX20779	125°C	192	HRS	80	0	PRO-11-X10403
HIGH TEMP OP LIFE	1921	MAX20779	125°C	620	HRS	80	0	PRO-11-X10403
HIGH TEMP OP LIFE	1921	MAX20779	125°C	192	HRS	80	0	PRO-11-X10403
HIGH TEMP OP LIFE	1928	MAX77964CEWJ+	125°C	1000	HRS	80	0	CCDD7A004FH
HIGH TEMP OP LIFE	1929	MAX17662BATE+	125°C	1000	HRS	77	0	CCAF0Q003FC
HIGH TEMP OP LIFE	1939	MAX77958EWW+	125°C	192	HRS	48	0	CCFP1Q001TL
HIGH TEMP OP LIFE	1943	MAX25605ATP/VY+	125°C	1000	HRS	80	0	CCCS1Q002FE
HIGH TEMP OP LIFE	1947	MAX20410AFOB/VY+	125°C	620	HRS	80	0	CCCY5A004D#
HIGH TEMP OP LIFE	1947	MAX20410AFOB/VY+	125°C	192	HRS	79	0	4KB0160
HIGH TEMP OP LIFE	1947	MAX20410AFOB/VY+	125°C	192	HRS	56	0	4KB0160
HIGH TEMP OP LIFE	2004	MAX20410AFOB/VY+	125°C	192	HRS	80	0	CCCY5Q003D#
<b>Total:</b>							<b>0</b>	

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### STORAGE LIFE

DESCRIPTION	DATE CODE	TEST VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.
STORAGE LIFE		MAX17662AATE+	150°C	1000 HRS	80	0	CCAF0Q003D
STORAGE LIFE	1840	MAX20000ATCB/V+	150°C	1000 HRS	80	0	CCUU4Q001B/DA
STORAGE LIFE	1842	MAX98937EWX+T	150°C	1000 HRS	80	0	CCUU3Q001CN
STORAGE LIFE	1847	MAX77503EEWC+T	150°C	1000 HRS	80	0	CCTX6Q002FM
STORAGE LIFE	1849	MAX77503EEWC+T	150°C	1000 HRS	80	0	CCTX6Q002EJ
STORAGE LIFE	1851	MAX20780	150°C	1000 HRS	80	0	ZOB00633AA-NPI
STORAGE LIFE	1851	MAX20780	150°C	1000 HRS	80	0	ZOB00634AA-NPI

STORAGE LIFE	1851	MAX20780	150°C	1000	HRS	80	0	Z0B00635AA-NPI
STORAGE LIFE	1852	MAX20000ATCB/V+	150°C	500	HRS	79	0	CCUU4Q002CF
STORAGE LIFE	1852	MAX20000ATCB/V+	150°C	1000	HRS	80	0	CCUU4Q003CD
STORAGE LIFE	1907	MAX77964EWJ+T	150°C	1000	HRS	78	0	CCBA3Q001D
STORAGE LIFE	1910	MAX77964EWJ+T	150°C	1000	HRS	80	0	CCBA3Q002C
STORAGE LIFE	1911	MAX17662AATE+	150°C	1000	HRS	80	0	CCAF0Q001E
STORAGE LIFE	1911	MAX17662AATE+	150°C	1000	HRS	80	0	CCAF0Q002BA
STORAGE LIFE	1943	MAX25605ATP/VY+	150°C	1000	HRS	80	0	CCCS1Q002FE
STORAGE LIFE	1947	MAX20410AFOB/VY+	150°C	1000	HRS	77	0	CCCY5A004D#
STORAGE LIFE	2004	MAX20410AFOB/VY+	150°C	312	HRS	80	0	CCCY5Q003D#
STORAGE LIFE	2004	MAX20410AFOB/VY+	150°C	192	HRS	80	0	CCCY5Q003E#
<b>Total:</b>							<b>0</b>	

### TEMPERATURE CYCLE

DESCRIPTION	DATE	TEST	CONDITION	READPOINT	QUANTITY	FAILS	LOT
	CODE	VEHICLE					NO.
TEMP CYCLE, 5' RAMP, 10' DWELL		MAX16604GFN+	-65C TO +150C (Condition C)	1000	CYS	80	0 R40430AT1
TEMP CYCLE, 5' RAMP, 10' DWELL		MAX16604GFN+	-65C TO +150C (Condition C)	1000	CYS	80	0 R40430DT1
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77511SEWB+	-40C TO +125C (Condition G)	500	CYS	80	0 CCTL4Z006B
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77511SEWB+	-40C TO +125C (Condition G)	500	CYS	80	0 CCTL4Z006C
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77511SEWB+	-65C TO +150C (Condition C)	1000	CYS	80	0 CCTL4Z006E
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77511SEWB+	-40C TO +125C (Condition G)	500	CYS	80	0 CCTL4Z006F
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77511SEWB+	-40C TO +125C (Condition G)	500	CYS	80	0 CCTL4Z006G
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77705FEWN+T	-40C TO +125C (Condition G)	500	CYS	80	0 CBTR7A733C
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77705FEWN+T	-40C TO +125C (Condition G)	850	CYS	73	0 CBTR7A733D
TEMP CYCLE, 15' RAMP, 15' DWELL		MAX77705FEWN+T	-40C TO +125C (Condition G)	850	CYS	75	0 CBTR7A733E
TEMP CYCLE, 15' RAMP, 15' DWELL	1744	MAX77705FEWN	-40C TO +125C (Condition G)	500	CYS	80	0 LOTB

TEMP CYCLE, 5' RAMP, 10' DWELL	1843	MAX17662AATE+	-65C TO +150C (Condition C)	500	CYS	79	0	CCAF0Q003D
TEMP CYCLE, 5' RAMP, 10' DWELL	1847	MAX77503EEWC+T	-65C TO +150C (Condition C)	1000	CYS	80	0	CCTX6Q002FM
TEMP CYCLE, 15' RAMP, 15' DWELL	1849	MAX77503EEWC+T	-40C TO +125C (Condition G)	500	CYS	80	0	CCTX6Q002DC
TEMP CYCLE, 5' RAMP, 10' DWELL	1849	MAX77503EEWC+T	-65C TO +150C (Condition C)	1000	CYS	80	0	CCTX6Q002EJ
TEMP CYCLE, 5' RAMP, 10' DWELL	1851	MAX20780	-65C TO +150C (Condition C)	1000	CYS	80	0	ZOB00633AA-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	1851	MAX20780	-65C TO +150C (Condition C)	1000	CYS	80	0	Z0B00634AA-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	1851	MAX20780	-65C TO +150C (Condition C)	1000	CYS	80	0	Z0B00635AA-NPI
TEMP CYCLE, 5' RAMP, 10' DWELL	1852	MAX20000ATCB/V+	-65C TO +150C (Condition C)	1000	CYS	71	0	CCUU4Q002CF
TEMP CYCLE, 5' RAMP, 10' DWELL	1852	MAX20000ATCB/V+	-65C TO +150C (Condition C)	1000	CYS	71	0	CCUU4Q003CD
TEMP CYCLE, 5' RAMP, 10' DWELL	1907	MAX77964EWJ+T	-40C TO +125C (Condition G)	850	CYS	80	0	CCBA3Q001D
TEMP CYCLE, 5' RAMP, 10' DWELL	1907	MAX20000ATCB/V+	-65C TO +150C (Condition C)	1000	CYS	72	0	CCUU4Q001B/DA
TEMP CYCLE, 15' RAMP, 15' DWELL	1910	MAX77964EWJ+T	-65C TO +150C (Condition C)	1000	CYS	80	0	CCBA3Q002C
TEMP CYCLE, 5' RAMP, 10' DWELL	1911	MAX17662AATE+	-65C TO +150C (Condition C)	500	CYS	80	0	CCAF0Q001E
TEMP CYCLE, 5' RAMP, 10' DWELL	1911	MAX17662AATE+	-65C TO +150C (Condition C)	500	CYS	80	0	CCAF0Q002BA
TEMP CYCLE, 5' RAMP, 10' DWELL	1943	MAX25605ATP/VY+	-65C TO +150C (Condition C)	200	CYS	80	0	CCCS1Q002FE
TEMP CYCLE, 5' RAMP, 10' DWELL	1947	MAX20410AFOB/VY+	-65C TO +150C (Condition C)	1000	CYS	79	0	CCCY5A004D#
TEMP CYCLE, 5' RAMP, 10' DWELL	2004	MAX20410AFOB/VY+	-65C TO +150C (Condition C)	500	CYS	80	0	CCCY5Q003D#
TEMP CYCLE, 5' RAMP, 10' DWELL	2004	MAX20410AFOB/VY+	-65C TO +150C (Condition C)	500	CYS	80	0	CCCY5Q003E#
<b>Total:</b>							<b>0</b>	

**TEMPERATURE HUMIDITY BIAS**

DESCRIPTION	DATE	TEST	CONDITION	READPOINT	QUANTITY	FAILS	LOT
	CODE	VEHICLE					NO.
BIASED MOISTURE		MAX77711AEWB+	130C, 85% R.H.	96 HRS	77	0	CCTL4Q003FM
BIASED MOISTURE		MAX17662AATE+	130C, 85% R.H.	96 HRS	78	0	CCAF0Q003D
BIASED MOISTURE		ENGAY17BTTI+	130C, 85% R.H.	96 HRS	76	0	CCBA0Z002BB
BIASED MOISTURE		ENGAY17BTTI+	130C, 85% R.H.	96 HRS	77	0	CCBA0Z002BB
BIASED MOISTURE		ENGAY17BTTI+	130C, 85% R.H.	96 HRS	80	0	CCBA0Z002BB
BIASED MOISTURE		MAX77705FEWN+	130C, 85% R.H.	264 HRS	79	0	CBTR7A640D
BIASED MOISTURE		MAX16604GFN+	130C, 85% R.H.	96 HRS	111	0	R40430AH2
BIASED MOISTURE		MAX16604GFN+	130C, 85% R.H.	96 HRS	111	0	R40430BH2
BIASED MOISTURE		MAX16604GFN+	130C, 85% R.H.	96 HRS	111	0	R40430CH2
BIASED MOISTURE		MAX16604GFN+	130C, 85% R.H.	96 HRS	111	0	R40430DH2
BIASED MOISTURE		MAX77511SEWB+	130C, 85% R.H.	264 HRS	45	0	CCTL4Z006C
BIASED MOISTURE		MAX77511SEWB+	130C, 85% R.H.	264 HRS	45	0	CCTL4Z006D
BIASED MOISTURE		MAX77511SEWB+	130C, 85% R.H.	264 HRS	45	0	CCTL4Z006G
BIASED MOISTURE		MAX16604GFN+	130C, 85% R.H.	96 HRS	80	0	CCUD2Z009C
BIASED MOISTURE	1846	MAX77930EFV+	130C, 85% R.H.	96 HRS	19	0	CBZU2Q002A
BIASED MOISTURE	1846	MAX77930EFV+	130C, 85% R.H.	96 HRS	20	0	CBZU2Q002A
BIASED MOISTURE	1846	MAX77930EFV+	130C, 85% R.H.	96 HRS	20	0	CBZU2Q002A
BIASED MOISTURE	1849	MAX77503EEWC+T	130C, 85% R.H.	264 HRS	80	0	CCTX6Q002DC
BIASED MOISTURE	1849	MAX77503EEWC+T	130C, 85% R.H.	264 HRS	80	0	CCTX6Q002EJ
BIASED MOISTURE	1851	MAX20780	130C, 85% R.H.	96 HRS	7	0	ZOB00633AA-NPI
BIASED MOISTURE	1851	MAX20780	130C, 85% R.H.	96 HRS	19	0	ZOB00633AA-NPI
BIASED MOISTURE	1851	MAX20780	130C, 85% R.H.	96 HRS	50	0	ZOB00634AA-NPI
BIASED MOISTURE	1851	MAX20780	130C, 85% R.H.	96 HRS	30	0	ZOB00634AA-NPI
BIASED MOISTURE	1851	MAX20780	130C, 85% R.H.	96 HRS	30	0	ZOB00635AA-NPI
BIASED MOISTURE	1852	MAX20000ATCB/V+	130C, 85% R.H.	96 HRS	75	0	CCUU4Q002CF
BIASED MOISTURE	1852	MAX20000ATCB/V+	130C, 85% R.H.	96 HRS	72	0	CCUU4Q002CF
BIASED MOISTURE	1852	MAX20000ATCB/V+	130C, 85% R.H.	96 HRS	80	0	CCUU4Q003CD
BIASED MOISTURE	1907	MAX77964EWJ+T	130C, 85% R.H.	264 HRS	80	0	CCBA3Q001D
BIASED MOISTURE	1910	MAX77964EWJ+T	130C, 85% R.H.	264 HRS	80	0	CCBA3Q002C
BIASED MOISTURE	1911	MAX17662AATE+	130C, 85% R.H.	96 HRS	79	0	CCAF0Q001E
BIASED MOISTURE	1911	MAX17662AATE+	130C, 85% R.H.	96 HRS	80	0	CCAF0Q002BA
BIASED MOISTURE	1911	MAX17662AATE+	130C, 85% R.H.	96 HRS	79	0	CCAF0Q002BA
BIASED MOISTURE	1912	MAX77964EWJ+T	130C, 85% R.H.	264 HRS	80	0	CCBA3Q003G
BIASED MOISTURE	1931	MAX22999ATU+	130C, 85% R.H.	96 HRS	80	0	CCBG2Z504A/A009B

BIASED MOISTURE	1943	MAX25605ATP/VY+	130C, 85% R.H.	96	HRS	79	0	CCCS1Q002FE
BIASED MOISTURE	1947	MAX20410AFOB/VY+	130C, 85% R.H.	96	HRS	80	0	CCCY5A004D#
BIASED MOISTURE	1948	MAX77511SEWB+	130C, 85% R.H.	264	HRS	45	0	CCTL4A007B
BIASED MOISTURE	1948	MAX77511SEWB+	130C, 85% R.H.	264	HRS	45	0	CCTL4A007C
BIASED MOISTURE	1948	MAX77511EWB+	130C, 85% R.H.	264	HRS	45	0	CCTLA007D
BIASED MOISTURE	1949	87-J779Z+X00	130C, 85% R.H.	96	HRS	20	0	EW203680AAE-ENG
BIASED MOISTURE	1949	87-J779Z+X00	130C, 85% R.H.	96	HRS	20	0	EW203680AAF-ENG
BIASED MOISTURE	1949	87-J779Z+X00	130C, 85% R.H.	96	HRS	20	0	EW203680AAG-ENG
BIASED MOISTURE	1949	87-J779Z+X00	130C, 85% R.H.	96	HRS	20	0	EW203680AAH-ENG
BIASED MOISTURE	2004	MAX20410AFOB/VY+	130C, 85% R.H.	96	HRS	80	0	CCCY5Q003D#
BIASED MOISTURE	2004	MAX20410AFOB/VY+	130C, 85% R.H.	96	HRS	80	0	CCCY5Q003E#
<b>Total:</b>							<b>0</b>	

### UNBIASED MOISTURE RESISTANCE

DESCRIPTION	DATE	TEST CODE VEHICLE	CONDITION	READPOINT	QUANTITY	FAILS	LOT NO.	
MOISTURE SOAK		MAX17662AATE+	130C, 85% R.H.	96	HRS	80	0	CCAF0Q003D
MOISTURE SOAK		ENGAY17BTTI+	130C, 85% R.H.	96	HRS	80	0	CCBA0Z002BB
MOISTURE SOAK		ENGAY17BTTI+	130C, 85% R.H.	96	HRS	80	0	CCBA0Z002BB
MOISTURE SOAK		ENGAY17BTTI+	130C, 85% R.H.	96	HRS	80	0	CCBA0Z002BB
MOISTURE SOAK	1851	MAX20780	130C, 85% R.H.	96	HRS	80	0	ZOB00633AA-NPI
MOISTURE SOAK	1851	MAX20780	130C, 85% R.H.	96	HRS	80	0	ZOB00634AA-NPI
MOISTURE SOAK	1851	MAX20780	130C, 85% R.H.	96	HRS	80	0	ZOB00635AA-NPI
MOISTURE SOAK	1852	MAX20000ATCB/V+	130C, 85% R.H.	96	HRS	80	0	CCUU4Q003CD
MOISTURE SOAK	1907	MAX77964EWJ+T	130C, 85% R.H.	96	HRS	80	0	CCBA3Q001D
MOISTURE SOAK	1907	MAX20000ATCB/V+	130C, 85% R.H.	96	HRS	80	0	CCUU4Q001B/DA
MOISTURE SOAK	1910	MAX77964EWJ+T	130C, 85% R.H.	96	HRS	80	0	CCBA3Q002C
MOISTURE SOAK	1911	MAX17662AATE+	130C, 85% R.H.	96	HRS	80	0	CCAF0Q001E
MOISTURE SOAK	1911	MAX17662AATE+	130C, 85% R.H.	96	HRS	80	0	CCAF0Q002BA
MOISTURE SOAK	1912	MAX77964EWJ+T	130C, 85% R.H.	96	HRS	80	0	CCBA3Q003G
MOISTURE SOAK	1943	MAX25605ATP/VY+	130C, 85% R.H.	96	HRS	80	0	CCCS1Q002FE
MOISTURE SOAK	1944	MAX77930EFV+	130C, 85% R.H.	96	HRS	80	0	CCCS2A007AO
MOISTURE SOAK	1947	MAX20410AFOB/VY+	130C, 85% R.H.	96	HRS	80	0	CCCY5A004D#
MOISTURE SOAK	2004	MAX20410AFOB/VY+	130C, 85% R.H.	96	HRS	80	0	CCCY5Q003E#
<b>Total:</b>							<b>0</b>	

**FAILURE RATE: MTTF (YRS): 407399 QUANTITY: 3097 FAILS: 0 FITS: 0.3**