



PLX Technology, Inc.

PEX8311-AA66BC F Reliability Report 4/7/2006

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QA & R Manager



PEX8311-AA66BC F Module (Pb-free RoHS) Reliability Test

BOM:

Substrate	Core/Prepreg	Glass epoxy
	Solder Resist	Epoxy
Die attachment		Ag filler, Acrylic acid resin
Au wire		Au
Resin		Biphenyle
Solder ball		Sn, Ag, Cu
Resistor A		Ceramic
	B	Alumina
Solder paste		Sn, Ag, Cu

1.0 Pre-Condition Level 3 (JESD-A113-D), 192hrs 30C/60%RH

Lot#	SS	Electrical Result Fail/Pass	SAM Result Fail/Pass
3 lots	135*	0/135	0/10

* 135 from 45 x 3 assembly lots

SS = Sample Size

1.1 Pressure Cooker Test (JESD-A102-C)

JESD-A102-C, 168 Hrs @ 121C/100% RH

Lot#	SS	Result Fail/Pass
3 lots	45*	0/45

* 15 x 3 assembly lots from 1 above after precon

1.2 Temperature Cycle Test (JESD22-A104B, Condition B), -55°C to 125°C 1000 cycles

Lot #	SS	250 Cycles, Result		500 Cycles, Result		1000 Cycles, Result	
		Rej	Pass	Rej	Pass	Rej	Pass
3 lots	45*	0	45	0	45	0	45

*15 x 3 assembly lots from 1 above after precon

1.3 THBT 85/85 (JESD22-A101-B), -85/85%RH, 1000 hrs

Lot #	SS	250 hrs		500 hrs		1000 hrs	
		Rej	Pass	Rej	Pass	Rej	Pass
3 lots	45*	0	45	0	45	0	45

* 15 x 3 assembly lots from 1 above after precon

1.4 High Temperature Storage Life (JESD22-A103-B)

Lot#	SS	Result Fail/Pass
3 lots	45	0/45

*15 x 3 assembly lots

PCI9056-BA66BI G, Device Reliability Data 0.25u Single Poly 4 Metal Logic Process

1. Operating Life Test (JESD22-A108-B) Condition: Ta = 125°C, Vddmax

Lot #	Sample size	168 hrs pass/reject	500 hrs pass/reject	1000 hrs pass/reject
125 C 3.6V, 1000hours	360*	360/0	360/0	360/0

*120x3 device lots

Total device hours of the device family = 360,000 hrs

FIT=33, MTBF = 3.03 X 10⁷ hrs based on confidence level 60% UCL, 55 °C &

Activation Energy 0.7 eV

2.1 ESD (JESD22-A114-B, JESD22-A115-A)

Condition	Sample size	Stress Level	Result
HBM, JESD22-A114-B	3x2 lots	≥2,000 V	Pass
MM, JESD-22-A115-A	3x2 lots	200 V	Pass

2.2 Latch-up (JESD78)

Condition	Sample Size	Stress Level	Result
Class II	6X2 lots	1.5 X Vcc Max, Current injection ±200mA	Pass



PEX8111-BB66BC Device Reliability Data 0.18µm Single Poly 6 Metal Logic Process

1.0 Operating Life Test (JESD22-A108-B) Condition: Ta= 125°C, Vddmax

Lot #	Qty	168hrs		500hrs		1000hrs	
		Rej	Pass	Rej	Pass	Rej	Pass
Qual Lot#1	120	0	120	0	120	0	120
Qual Lot#2	120	0	120	0	120	0	120
Qual Lot#3	120	0	120	0	120	0	120

Total device hours of the device family including the above lots = 4.185E7,
FIT=11, MTBF = 9.09 X10⁷(hours) based on confidence level 60% UCL, 75 °C &
Activation energy 0.7 eV

2.1 Human Body Model (HBM; JESD22-A114-C)

Product	Lot #	SS	Test Result
PEX8111,161 Lead	#1	3	Passed ± 2000V
PEX8111,144 Lead	#2	3	Passed ± 2000V

2.2 Machine Model (MM; JESD-22-A115-A)

Product	Lot #	SS	Test Result
PEX8111,161 Lead	#1	3	Passed ± 200V
PEX8111,144 Lead	#2	3	Passed ± 200V

2.3 Charge Device Model (CDM; JESD22-C101)

Product	Lot #	SS	Test Result
PEX8111,161 Lead	#1	3	Passed ± 500V
PEX8111,144 Lead	#2	3	Passed ± 500V

2.4 Latch-up (JESD78)

Product	Lot #	Qty	Test Result @ VCCX1.2 Max
PEX8111,161 Lead	#1	3	Passed Current Injection = ± 500mA
PEX8111,144 Lead	#2	3	Passed Current Injection = ± 500mA