

Wafer Sort Correlation Report for AFS Products

Overview

- Name of the Vendor: Ardentec Taiwan
- Qualification of AFS device family
 - AFS090/250/600/1500
- Correlation vehicle: AFS1500 wafer sort
- Actel provides the following to Ardentec:
 - Complete test program and test vectors
 - Hardware
 - Correlation wafer
- In conclusion, correlation is established between Ardentec and Actel based on the following
 - Hardware/Test Programs
 - Correlation Data
 - Summary

Hardware

- Test program and test hardware
 - Actel provides the following to Ardentec Taiwan:
 - Complete test program and test vectors
 - Identical test program is used at Ardentec Taiwan and Actel Mountain View
 - Hardware
 - AFS1500 Test Probe Card
 - Correlation wafer
 - One (1) AFS1500 engineering correlation wafer lot # ZA845052 for engineering data collection
 - Equipment used
 - Test Equipment: Teradyne J750
 - Wafer Probe: TSK 200

HARDWARE

S/N	Probe Card ID	Tester		Test Program Revision		Remarks
		ACTEL	ARDENTEC	ACTEL	ARDENTEC	
1	15174	J750	J750	C13	C13	Wafer sort

Correlation

- Correlation activity is as follows:
 - One (1) wafer from wafer lot # ZA845052 is sorted at Actel and then resorted at Ardentec
 - Sixteen die from correlation wafer lot # ZA845052 is retested at both sites for more detail dut site to site and bin to bin comparison and repeatability study
 - Test Data are shown in the attachment
 - Za845052_w9_actl_sum => J750 wafer sort test summary from Actel
 - Za845052_w9_ardemtec_sum => J750 wafer sort test summary from Ardentec
 - ZA845052-09_actl_1td_log => J750 16 site correlation datalog from Actel
 - ZA845052-09_ard_1td_log => J750 16 site correlation datalog from Ardentec
 - za845052_afs1500_wafermap_comparison => Wafer map comparison



za845052_w9_actl_
sum



za845052_w9_arde
ntec_sum



za845052-09_actl_
1td_log



za845052-09_ard_
1td_log



za845052_afs1500
wafermap_comparis

Summary

Product: AFS1500

Wafer Lotid: ZA845052

Wafer Number: 9

Table 2 - Sixteen die site to site comparison

DUT Site #	Bin Number	Total # of die		Discrepancy	Remarks
		ACTEL	ARDENTEC		
0	755	1	1	0.00%	Failed bin
1	486	1	1	0.00%	Failed bin
2	12	1	1	0.00%	Failed bin
3	12	1	1	0.00%	Failed bin
4	12	1	1	0.00%	Failed bin
5	11	1	1	0.00%	Failed bin
6	96	1	1	0.00%	Failed bin
7	74	1	1	0.00%	Failed bin
8	755	1	1	0.00%	Failed bin
9	101	1	1	0.00%	Failed bin
10	12	1	1	0.00%	Failed bin
11	12	1	1	0.00%	Failed bin
12	12	1	1	0.00%	Failed bin
13	12	1	1	0.00%	Failed bin
14	755	1	1	0.00%	Failed bin
15	1	1	1	0.00%	Good bin

Summary

- Correlation results at both Ardentec and Actel
 - There is a 1.22% discrepancy (one die) from data presented in Table 1 between Actel and Ardentec. This die fails “continuity open” test at Actel and is retested at Ardentec to be good bin 1. This failure was caused by bad contact during probing at Actel. The die was verified and retested at Actel to be good.
 - The detail bin to bin failures on sixteen die shown in Table 2 does not show any discrepancy. Repeatability 10x shows similar failures on the failed die.