bluetest Testservice GmbH

Service : Electrical Test during Ramp Up

Note: see also "electrical series test"

Purpose

Test data collected during ramp up helps to gain experience in a systematic way.
It is useful for optimisation of product and test related processes.

Benefits

In regards of testing the major concern is simplifying tests and reducing test time.
Without systematic analysis this could lead to quality issues like wike coverage or even test holes.

Bluetest Expertise

We are familar with the ramp up procedures of well-known semiconductor manufacturers and the high qualitiy level that can be achieved.
With the right sense of proportion we transfer this knowledge to products with smaller numbers of pieces.

Activities
Participants

Test, product responsible

Requirements, Input

The drawing below offers a list of choices.
Defining the first three production lots as ramp up lost would be a minimal solution

Image : ramp up procedures

Example: Corner Lot definition , Source AMS

Condition	NMOS Transistor		PMOS Transistor			HR Poly/Poly 2	Capacitor	# of Wafers
	L_eff	V_t	L_eff	V_t		Sheet Res.	Value	
Typical Mean	typ	typ	typ	typ		typ	typ	3
Worst Case Speed	>	>	>	>		>	>	3
Worst Case Power	<	<	<	<		<	<	3
Worst Case One	typ	<	typ	>		typ	typ	3
Worst Case Zero	typ	>	typ	<		typ	typ	3

Performance

Execute electrical tests under series test conditions.
Collected test data is analyzed using statistic tools.
Special attention should be turned to:

-Yield per Test
-Test time per test step
-Tests with CPK<1.33
-Pass@Retest (failing parts which become good at retest)

Result, Output

A list of improvement proposals is derived from results and analysis.
With your approval we will realize the improvements by changing test program and flow.
Test specification must be changed and approved for serial test.

The whole setup (test program, test system, test hardware, sample) must be verified by acceptance procedures (MSA = measurement system analysis)
See also “statistics”

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