UX2334

Package Level Reliability Test System

Features

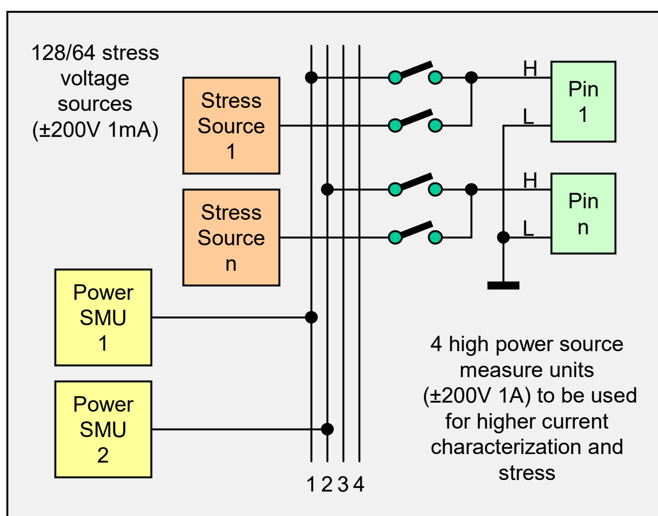
- Oxide integrity and transistor test (TDDB, BTI, HCI)
- High capacity: Up to 128 devices in 16 stress groups
- ±200V stress and characterization voltage (±400V mode w/ half test capacity)
- TDDB testing w/o coincident failures: One stress source for each DUT
- High power source measure units for transistor stress and characterization
- Optional switch matrix: Free assignment of package pins
- Optional high speed ADC: 1us timing resolution
- Reliable and low noise: No cables or board connectors in oven chamber
- Temperature range: 80°C to 250°C (optional 20°C to 250°C)

The mb-Technologies UX2334 is a package level test system for oxide reliability and transistor test. It has been designed to avoid known problems with some older test systems and achieve the best performance available today!

A source for each DUT

To avoid mutual influence during oxide test (TDDB), each DUT has it's own voltage source with auto-ranging current meter. These sources are also used for other tests with lower current requirements like transistor gates or voltage bias. The system also provides fast high power source measure units, sourcing up to 1A current. They are mainly used for transistor test.

An optional high speed ADC adds the capability of high speed measurements like BTI degradation with 1us timing resolution.



Simplified schematics

Software-selectable package pins

DIL-24 packages are typically used for the DUTs. For full flexibility with different package bonding diagrams the system can be equipped with a versatile switch matrix, allowing each package pin to be assigned to any test function. This can be selected by software, no jumper arrays any more.

DUT boards with sockets for other package types are available on request.

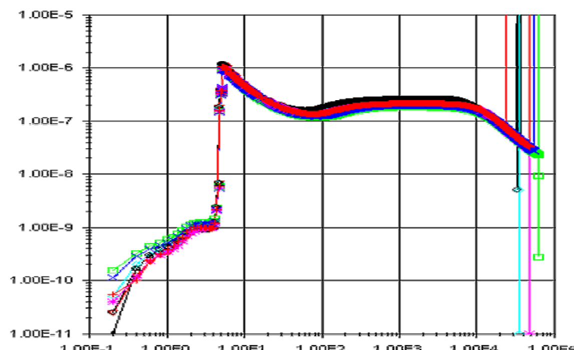
Software

The test system is controlled by mbStudio, a full featured software environment which is used for device characterization, experiment setup/execution and data analysis.

Results can be exported in various formats for documentation and further analysis.

mbStudio supports multiple experiments to be started and stopped individually and executed in parallel. Measurements are executed locally by the test system with strict timing control.

Test algorithms conform to JEDEC standards, but can be modified and enhanced to special requirements.



Specifications

Voltage Range	Resolution	Accuracy
200V	10mV	0.05% (100mV)
20V	1mV	0.05% (10mV)
2V *	100uV	0.05% (1mV)
200mV *	10uV	0.10% (200uV)

Current Range	Resolution	Accuracy
1A *	50uA	0.10% (1mA)
100mA *	5uA	0.10% (100uA)
10mA *	500nA	0.10% (10uA)
1mA	50nA	0.10% (1uA)
100uA	5nA	0.10% (100nA)
10uA	500pA	0.10% (10nA)
1uA	50pA	0.10% (1nA)
100nA	5pA	0.10% (100pA)
10nA *	500fA	0.10% (10pA)
1nA *	50fA	0.20% (2pA)

* Additional ranges available for high power sources

Timing resolution	10ms (low current sources) 100us (high power sources) 1us (high speed ADC)
Temperature range	80°C to 250°C 20°C to 250°C (optional)

See user's manual for more specification details.

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