

TLP Tester

HED-T5000 series

For getting the detail information of protect circuit activity!

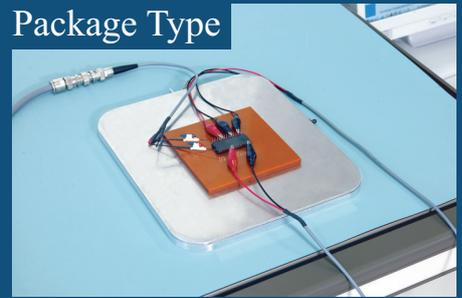
TLP(Transmission Line Pulse) Tester allows to get the activity parameter of protect circuit in the semiconductor. To be increased the ESD withstand voltage needs to analysis the protect circuit. Much useful information include in the test result and save the time to development process of semiconductor.



Wafer Type



Package Type



Features

Most advanced test mode for TLP test

Both of NTLP(normal TLP) and VFTLP(Very Fast TLP/Short Pulse type TLP) type are offered to our customer. Pulse width of normal type TLP is 100ns/200ns, and is 1ns for VFTLP. These are useful to verify ESD withstand voltage in HBM/MM test mode.

Powerful monitor to support analysis

An oscilloscope included in TLP tester allows to be confirmed an incident wave to device and a reflective wave from device. After the incident and reflective wave automatically saved, display on the exclusive monitor. The exclusive monitor displays the incident and reflective wave with total, in addition, snapback characteristics and leak measurement value from V_f/I_m measurement with trace.

Difference display for characteristics data

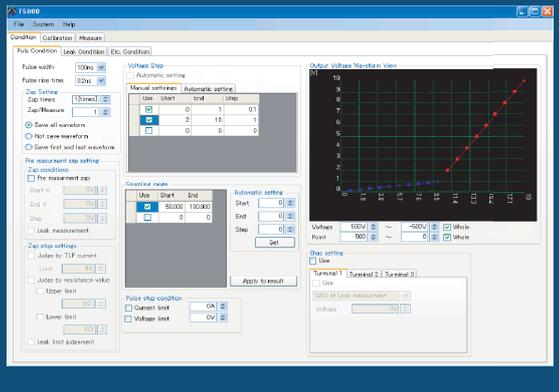
The data saved from oscilloscope allows arithmetic process with high flexibility. Those can display ON voltage of transistor in difference process or maximum current value in the protect circuit as multiple trace on the same time. It is possible to confirm the difference value of each trace.

Connection to Wafer ESD tester

TLP tester can achieve automatic measurement with connection to Wafer ESD tester. Automatic measurement and automatic shift to next zap pin and next chip on a wafer are leading to increased test efficiency.

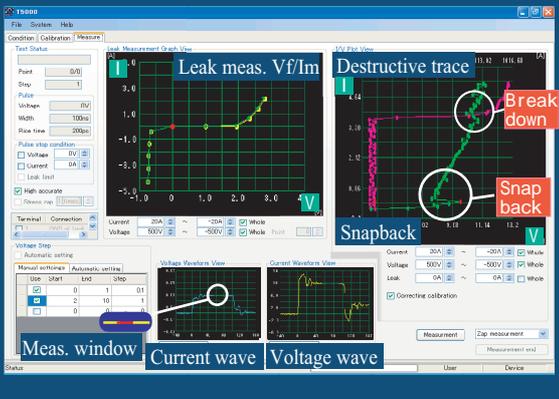
Powerful support to gathering data and analysis

Meas. condition



- It is possible to set pulse polarity, pulse width and step voltage from PC. Step voltage can change in the middle of test.
- For the protection of device, voltage/ current limiter is equipped in the tester.
- Ability of leak measurement by Vf/Im is equipped. Setting measurement points are maximum 20 points.
- The destructive evaluation for device can implement with leak measurement ability. The destructive level depends on setting threshold.

Meas. result



- Oscilloscope and monitor can display the incident wave and reflective wave of voltage/current with total for TLP pulse.
- The width and position of measurement window can adjust on the trace by using cursor.
- For checking the difference of snapback characteristic by the changing process technology, the TLP tester make multiple snapback characteristics display on the same monitor.
- The relation between the measuring point of snapback characteristic and the destructive judgment trace is one-to-one correspondence. It allows comparing and verifying the destructive point of device and snapback characteristic.
- Leak measurement Vf/Im allows to confirm the leak current for each TLP pulse.

Standard specification

Tester model	HED-T5000	HED-T5000VF
TLP test model	TDR(Time Domain Reflection)	TDR(Time Domain Reflection)
Pulse voltage	Open terminal volt. :+/-500V (0.1V/step) 50 load :+/-250V (0.2V/step)	Open terminal volt. :+/-1000V (0.1V/step) 50 load :+/-500V (0.2V/step)
Pulse current	Short :Max. 10A, 50 load :Max. 5A	Short :Max. 20A, 50 load :Max. 10A
Pulse width	100ns/200ns (by software)	1ns/2ns/3ns/100ns/200ns (by software)
Pulse rise time	200ps/2ns/10ns/20ns/50ns	200ps/2ns/10ns/20ns/50ns
Oscilloscope	Tektronix TDS3052B (500 MHz)	Tektronix 6GHz
Current probe	Tektronix CT-1 (1GHz)	Tektronix CT-6 (2GHz)
Leak measurement	Measurement vol. +/-40V (0.1V/step) Measurement cur. Max.100mA	Measurement vol. +/-40V (0.1V/step) Measurement cur. Max.100mA
System size	1170(W) × 750(D) × 1120(H) Included PC	1170(W) × 750(D) × 1420(H) Included PC
Weight	Package type :Approx. 80 Kg	Package type :Approx. 100 Kg
Communication pro.	RS232C/GPIB	RS232C/GPIB
OS	Windows XP	Windows XP
Power	AC100V/5A 50/60Hz	AC100V/16A 50/60Hz



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