

BS/Master's thesis

ESD Occurrence-Rate and Voltage level Distribution Study



Motivation

Since electro static discharge (ESD) is well known as a threat in the electronics industry and to electronic systems, the occurrence rate and severity of these small, but in nanoseconds rising currents of up to 100 A needs to be known. This determines the ESD stress, which can be expected by electronic devices in real life conditions. Selecting suitable protection devices, which withstand real discharge events is difficult due to the low number of existing data sets on actual ESD. Providing such a data set which combines the occurrence-rate and probability distribution of the voltages can help manufacturers of electronic devices to protect their devices suitable for the real use case.

Research topic

Sensors that can detect ESD events and estimate the ESD discharge voltage of individual persons should be distributed to a group of study participants. The ESD events detected during the study should be evaluated in a statistical quantitative and qualitative manner. Results should be compared to existing data from literature and analyzed regarding the influence of environmental parameters such as humidity.

- Recruitment of study participants (up to 15 sensor devices available)
- Conducting and organizing the study
- Continuous monitoring of study results and support/trouble shooting with study participants
- Detailed analysis of results and statistical analysis

Organizational matters

- Start: from November
- Workplace: at the institute

Contact/Supervision

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