
Latent Damage and Reliability in Semiconductor Devices

Advisor: Dr. Randall Geiger

Client: Dr. Randall Geiger, EcpE

Members (roles):

Sean Santella (Leader)

Jaehyuk Han (Webmaster)

Hayle Olson (Communication Leader)

David Ackerman (Key Concept Holder)

Weekly Summary:

We held both team and advisor meetings this week. We attempted to recreate our Stress PCB circuit to stress without our capacitor being an issue. We took our results to Dr. Geiger. Our insulating varnish arrived late this week; we will be applying it when we get back from Spring Break. We will continue to research components with the required temperature thresholds.

Meeting Notes:

Team Meeting (March 8th at 2PM in Coover 3014)

Duration: 1 Hour

Members Present: Sean Santella, Jaehyuk Han, Hayle Olson, David Ackerman

Notes: During this team meeting we took some of Dr. Geiger's advice and tried to create a duplicated circuit for the Stress PCB. Unfortunately, this did not work as planned. We checked the status on our insulating varnish, it should arrive in the next couple of days.

Advisor Meeting (March 10th at 1PM in Coover 1219)

Duration: 1 Hour

Members Present: Dr. Geiger, Sean Santella, Jaehyuk Han, Hayle Olson, David Ackerman

Notes: During this advisor meeting we were able to discuss with Dr. Geiger our findings with various tri-state buffers. We reviewed various data sheets and concluded that we might be able to use the tri-state buffer that we are currently using. We need to test this further.

Weekly Accomplishments:

- The Insulating Varnish arrived this week.
- We continued to test the tri-state buffers
- The Insulating Varnish is on order and should arrive mid next week.

Plans for Next Week:

- Start developing a new PCB design for our burn-in boards.
- Research components with high temperature thresholds.
- Use the insulating varnish to insulate capacitor on the Stress PCB.
- Find a stressing condition that will destroy 50% of our devices.
- Research and Calculated a burn-in temperature.

Pending Issues:

- None

Individual Contributions:

Sean Santella: Attended both team and advisor meetings, and tinkered with temperature, soldering, and testing the Stress PCB.

Jaehyuk Han: Attended both team and advisor meetings.

Hayle Olson: Attended both team and advisor meetings, wrote weekly report, and tinkered testing the Stress PCB.

David Ackerman: Attended both team and advisor meetings, and tinkered with the stress PCB.

Hourly Contributions:

| <u>Member:</u> | <u>Weekly Hours:</u> | <u>Semester Hours:</u> | <u>Yearly Hours:</u> |
|----------------|----------------------|------------------------|----------------------|
| Sean Santella | 4.5 | 16.5 | 69.5 |
| Jaehyuk Han | 2.0 | 12.0 | 48.5 |
| Hayle Olson | 3.5 | 17.0 | 63.5 |
| David Ackerman | 2.4 | 17.0 | 59.0 |

Semester Total: 62.5 Hours

Yearly Total: 240.5 Hours