PD gluing status report

Gluing materials and procedure

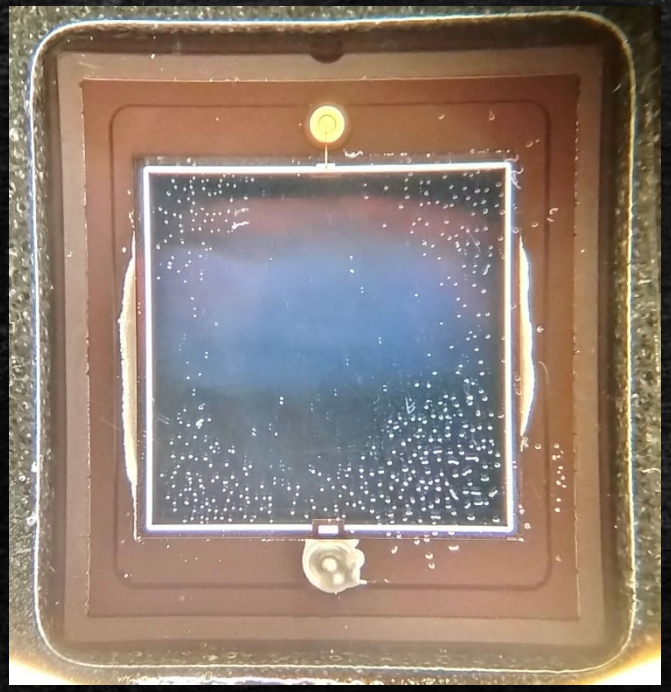
We have tested

- Dow corning 732
- Dow corning 3145
- Sylgard 184
- General purpose silicon

Dow corning sealant test

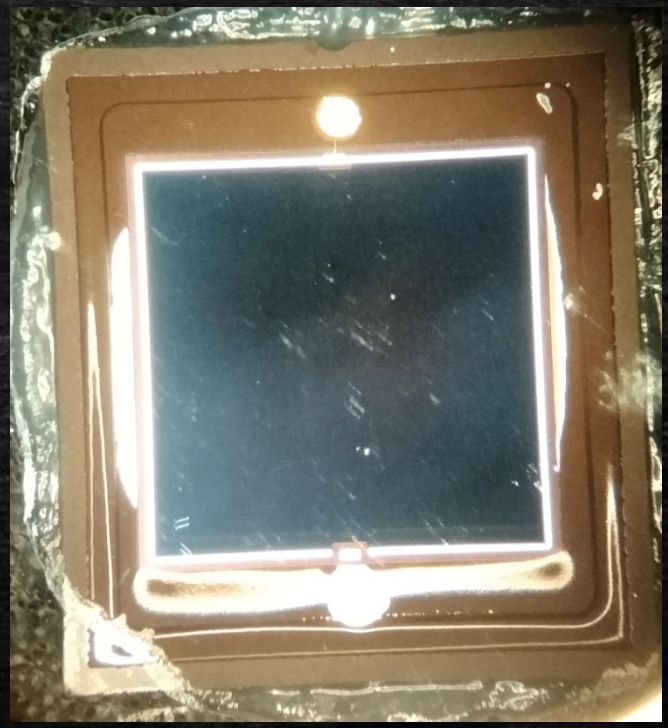
3 different types of Dow Corning solutions were tested

184



732

3145



Dow corning sealant test

Few critical points about Sylgard 184

- Two components. Needs outgassing.
- Low viscosity
- Long spot life time

Very thin layer

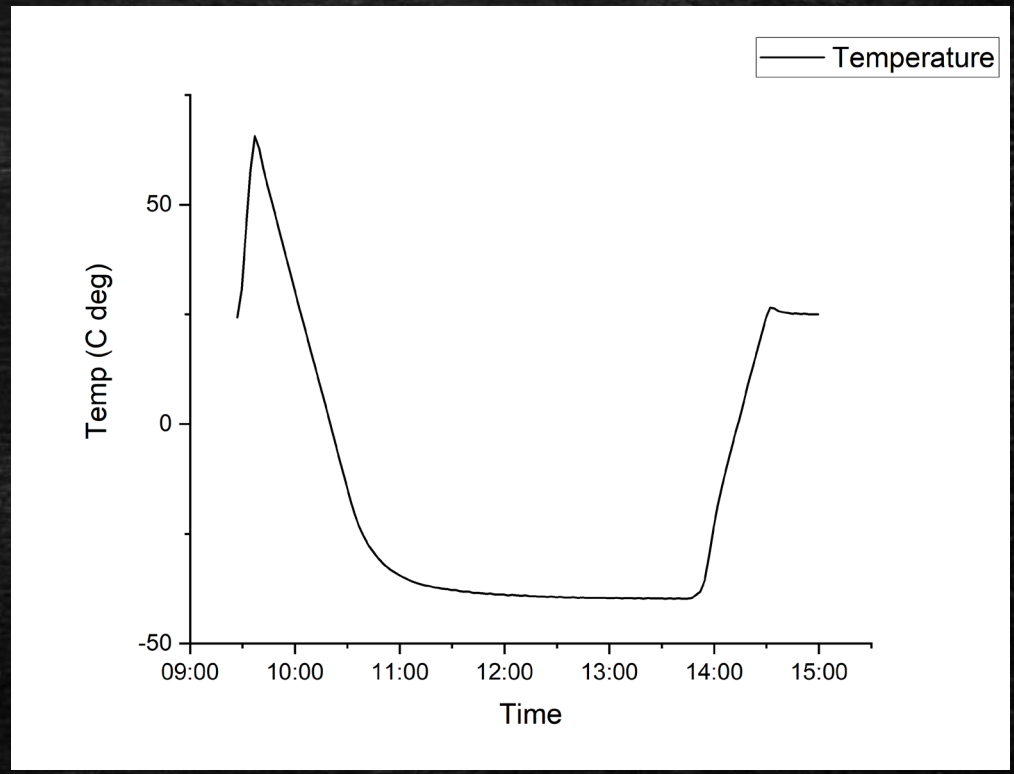
PD must be fixed for 48 hours

Dow corning sealant test

Few critical points about Sylgard 184

Products under test:
184 applied immediately, after 4 h and after 6 h

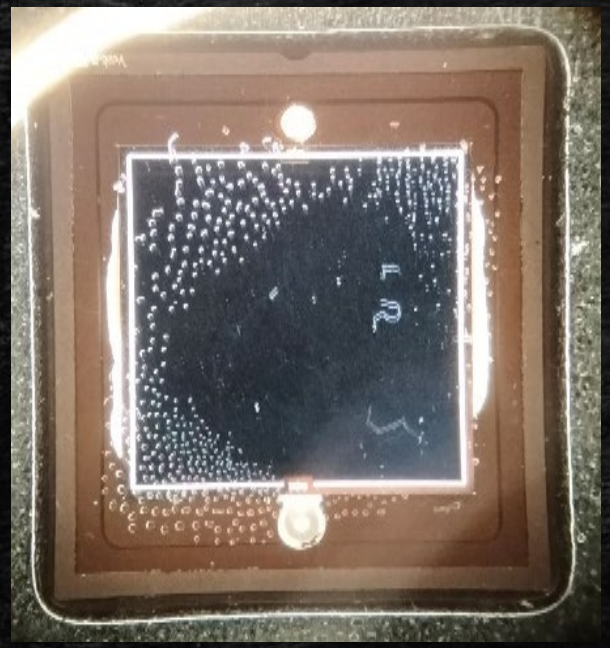
Climate camera test
$+25^{o} \gg +65^{o} \gg -40^{o} \gg +25^{o}$



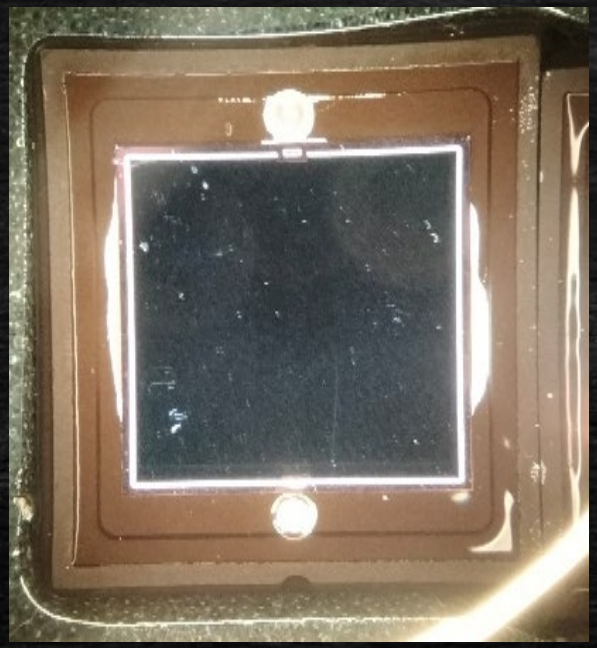
Dow corning sealant test

Sylgard 184

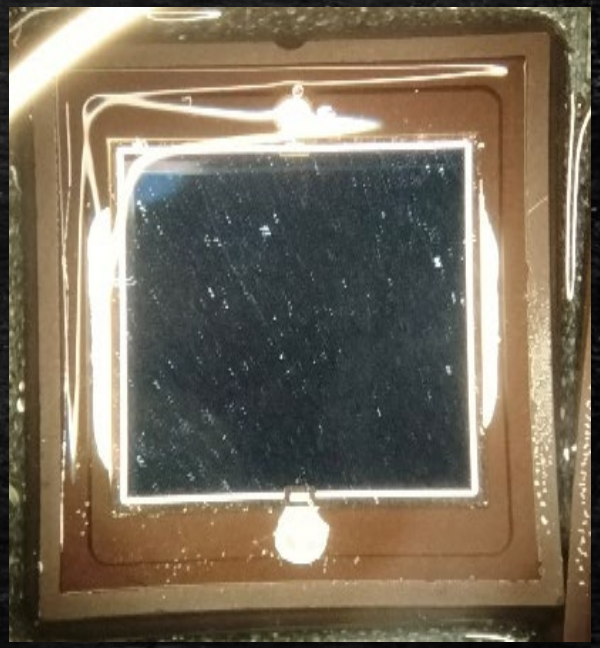
0 hours



4 hours



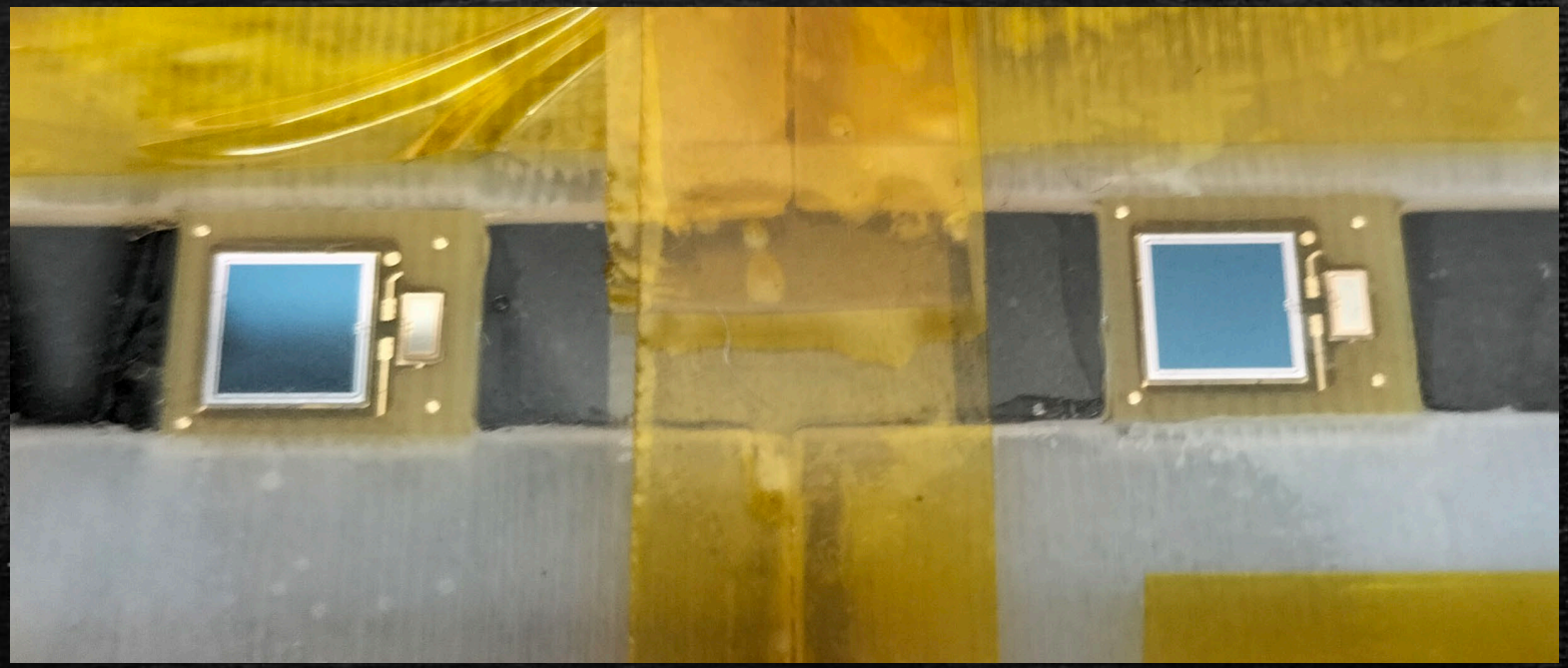
6 hours



Dow corning sealant test

DC 184 has been tested on new PDs with 6 hours waiting time and ~300 um spacer.

Thermal cycle: $+25^{o} \gg +65^{o} \gg -40^{o} \gg +25^{o}$



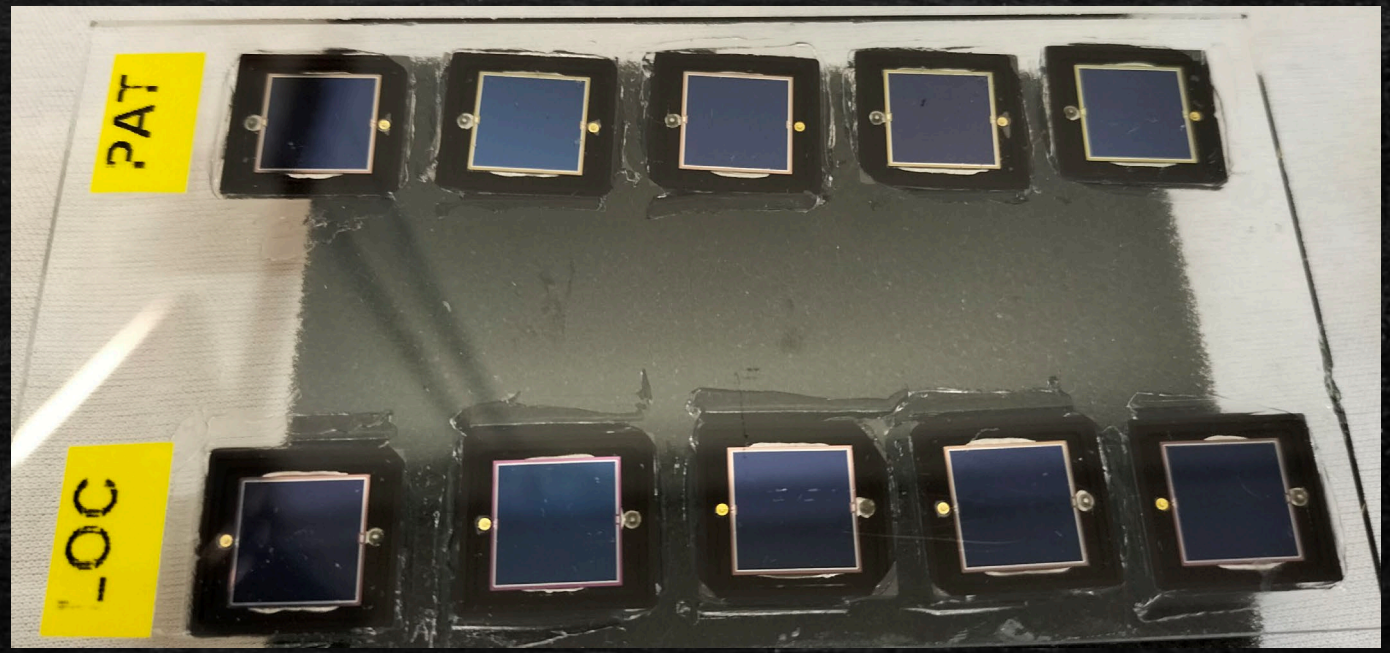
General purpose silicon

Also we have tested general purpose silicon sealants by Loctite and Pattex.

Both products work well with thermal test.

Any optical or vibration tests have been done.

NO SPACE QUALIFICATION



Results

DC 732 and 3145

- Both work well. Optical, thermal and vibration test have been done. Some space qualification tests. We have only small amount. Both are out of production and are not available on European market.

Sylgard 184

- Good optical contact. Space qualified. Some problems with thermal tests. Hard to use. Needs more time to develop the correct gluing procedure.

Sylgard 93-500

- Best solution? Estimated delivery time – end of Aprile.

General purpose silicons

- Can be considered as very backup and temporal solution.