

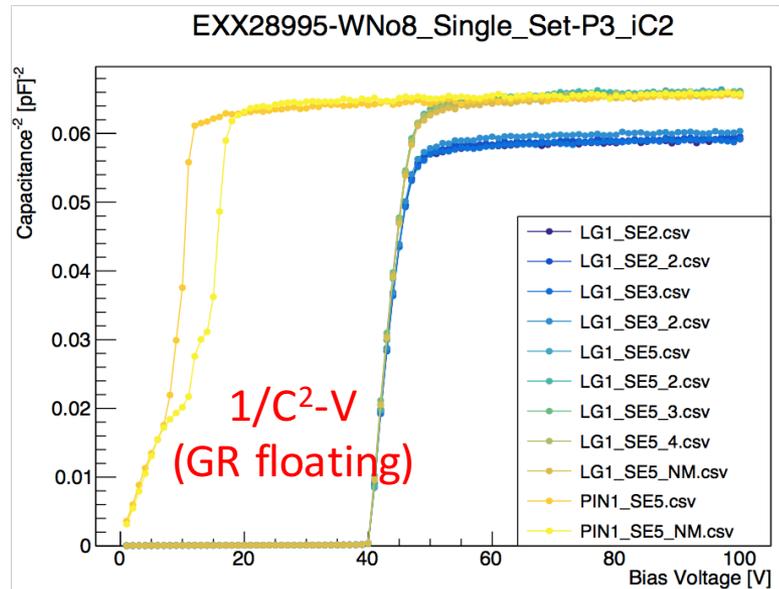
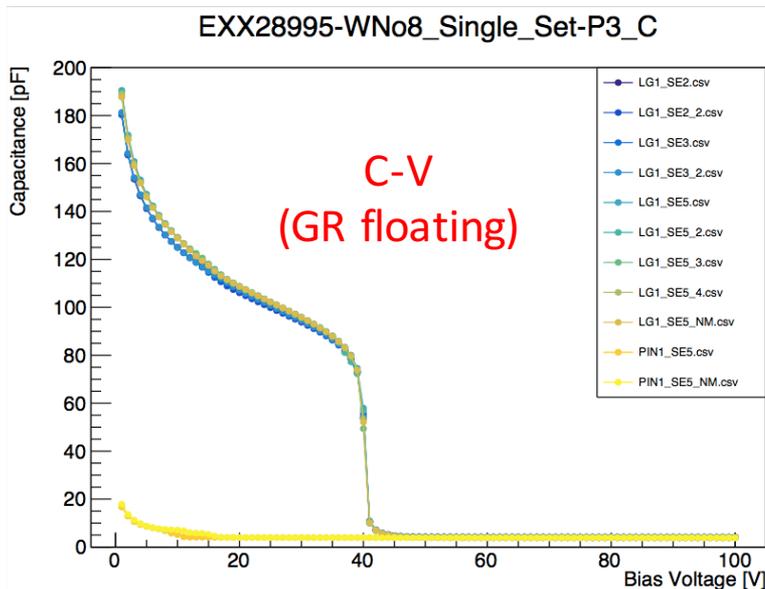
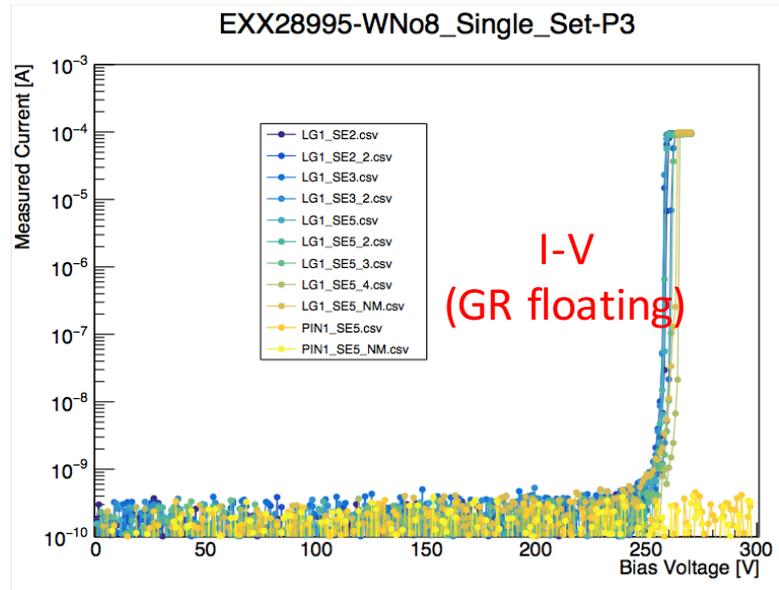
Impact of guard ring in CV measurement

Liaoshan Shi

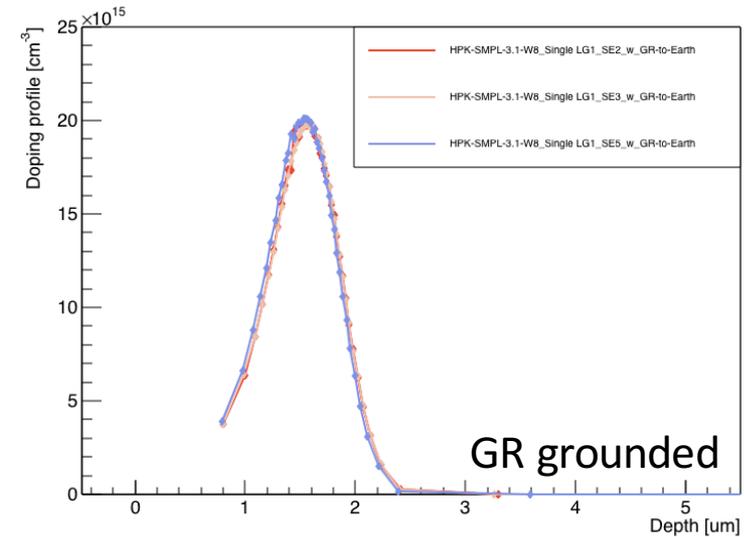
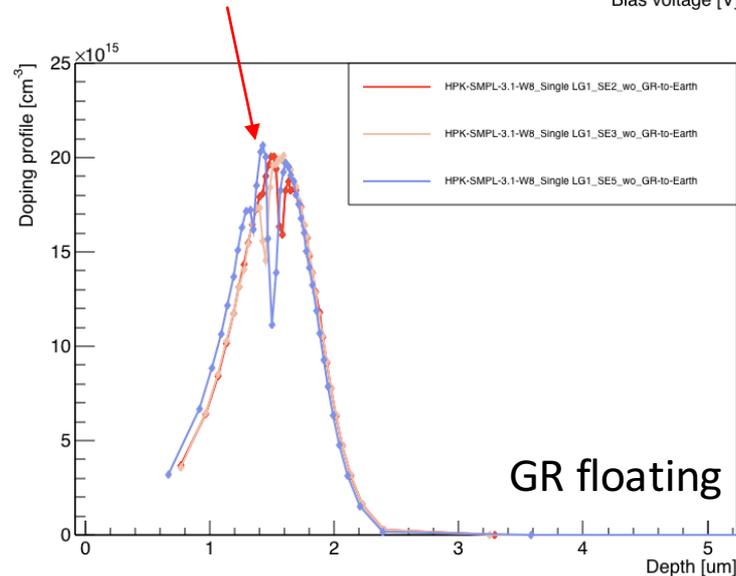
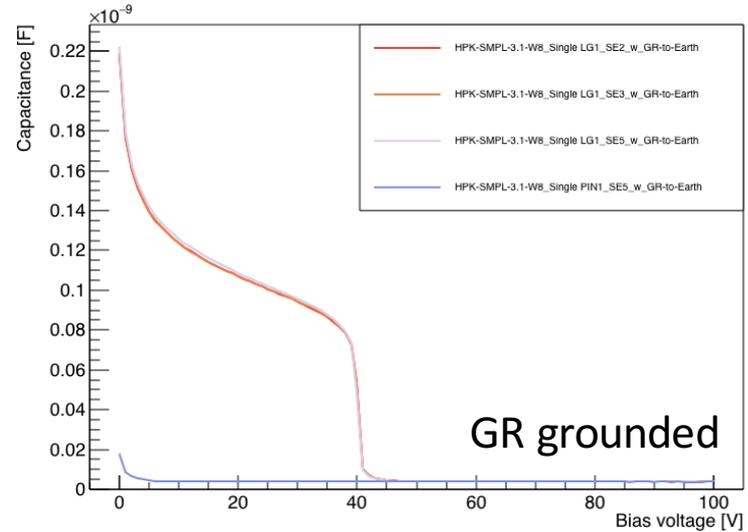
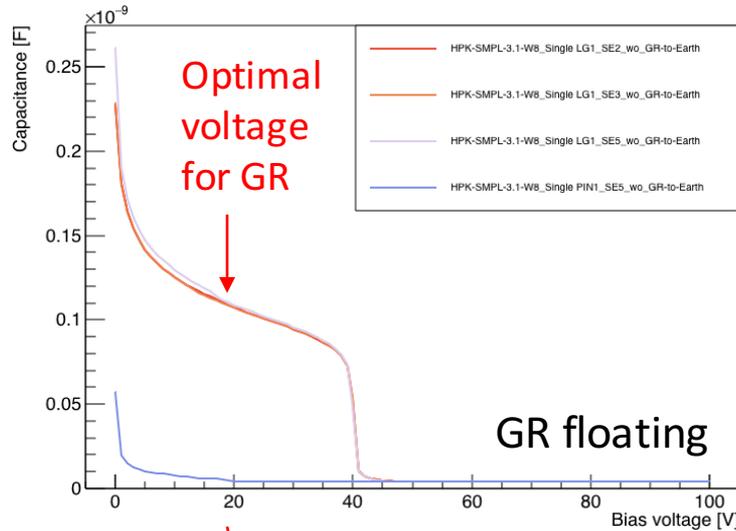
Mar. 7, 2019

Basic information of HPK W8 single pad sensors

- Type: 3.1
- Thickness: 50um
- Breakdown voltage: 250V
- Full depletion voltage: 40V
- Capacitance at full depletion: 4pF



Guard ring from CV data



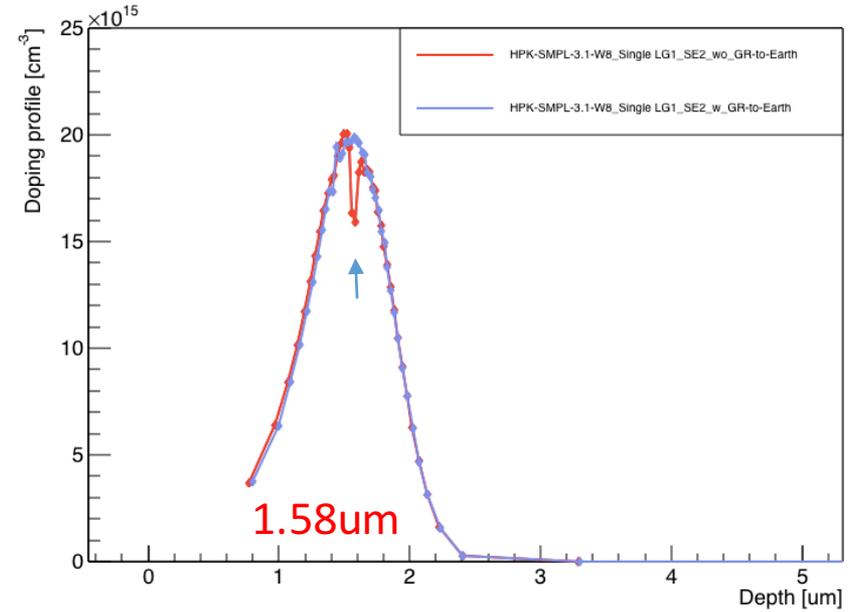
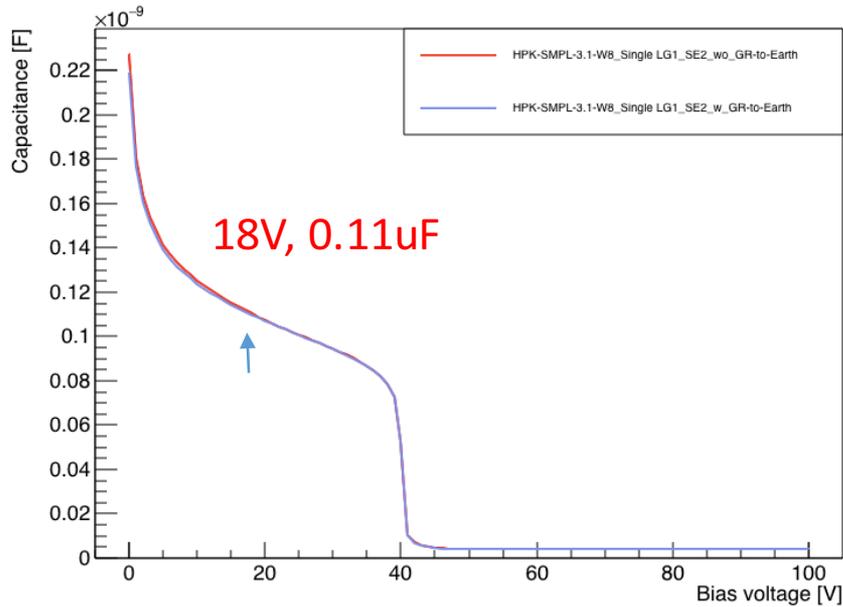
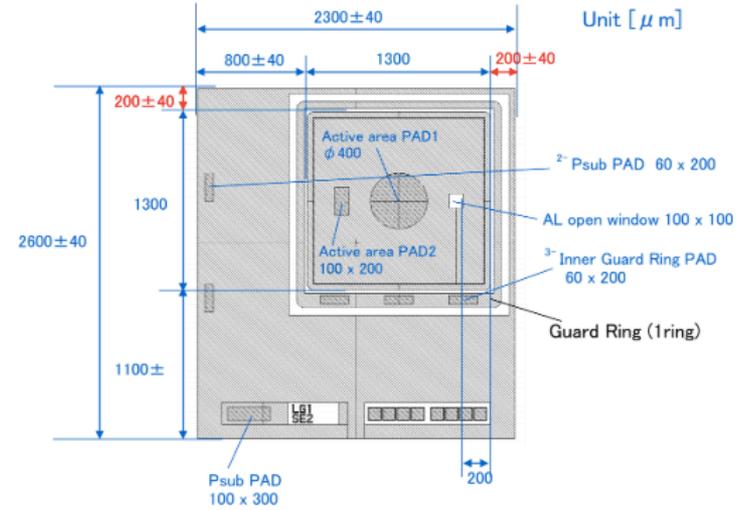
Comments from Vagelis: By leaving the GR floating, the potential on it is not zero but rather increases with biasing voltage until it asymptotically reaches the optimal value.

Guard ring for LG1_SE2

Single guard ring

Legend:

- GR floating
- GR grounded

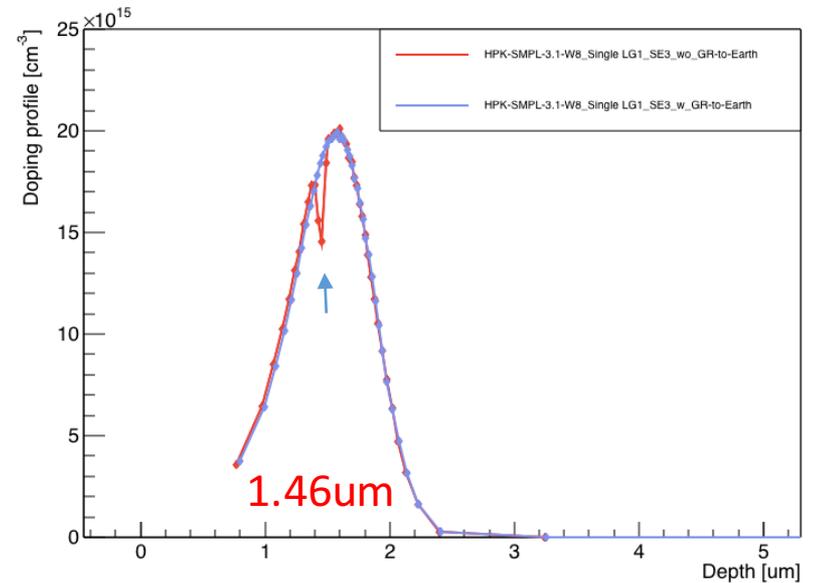
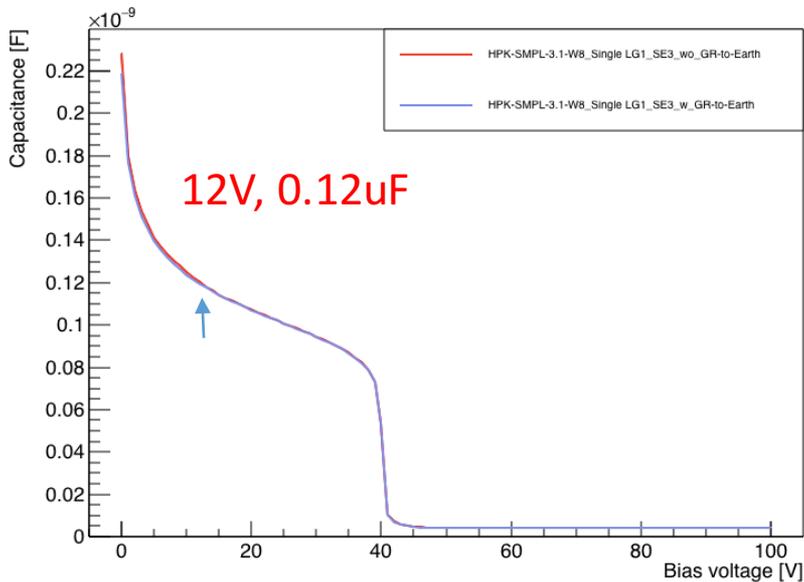
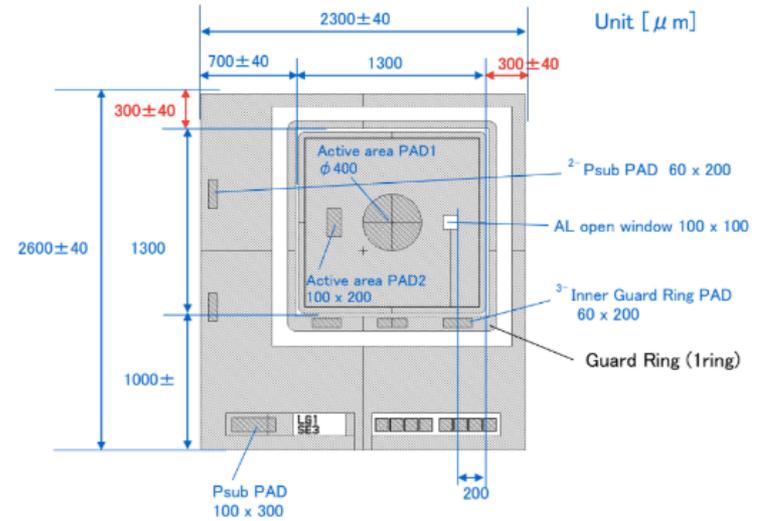


Guard ring for LG1_SE3

Single guard ring

Legend:

- GR floating
- GR grounded

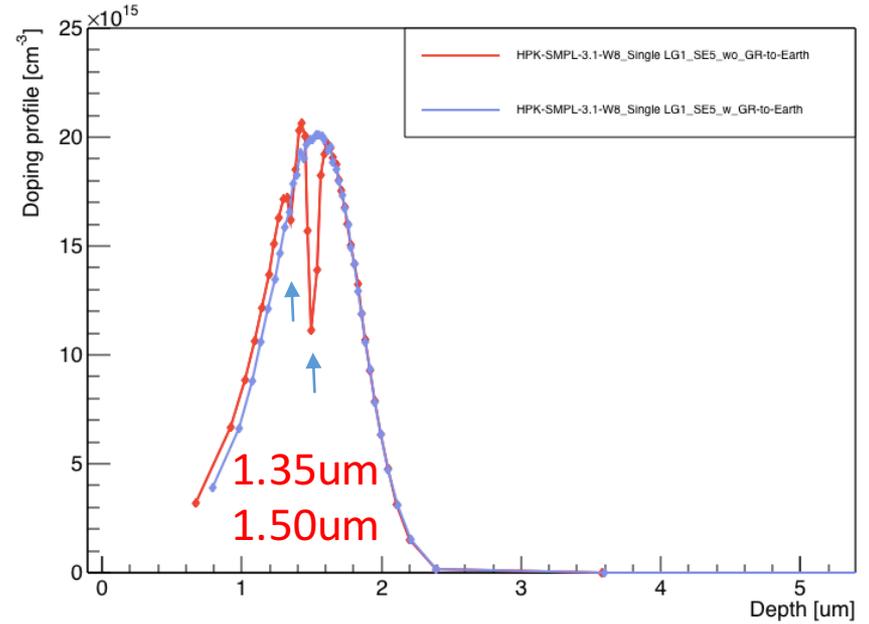
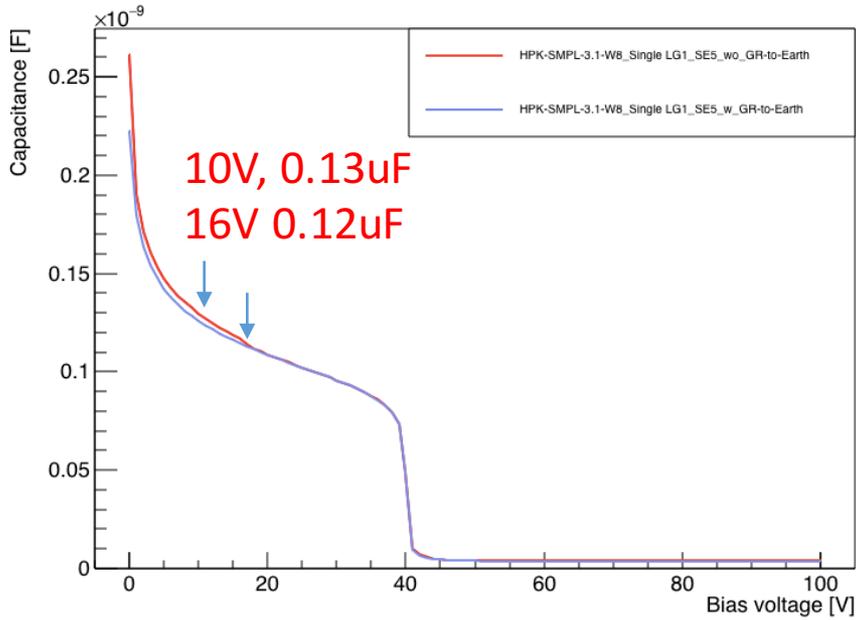
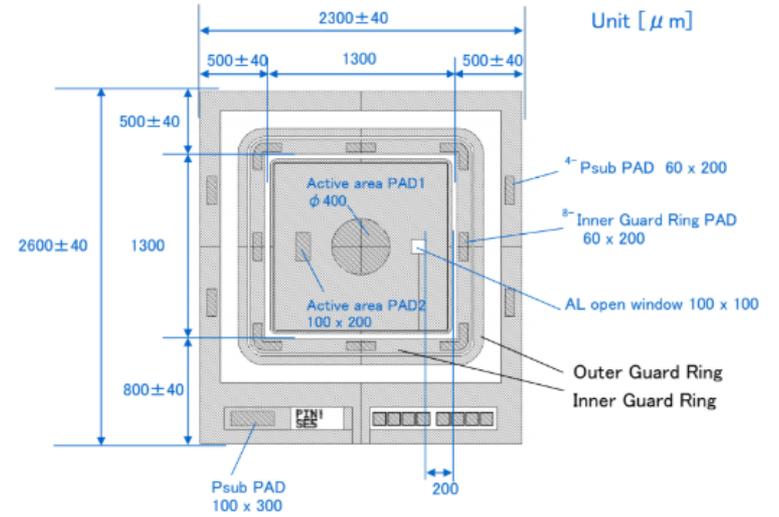


Guard rings for LG1_SE5

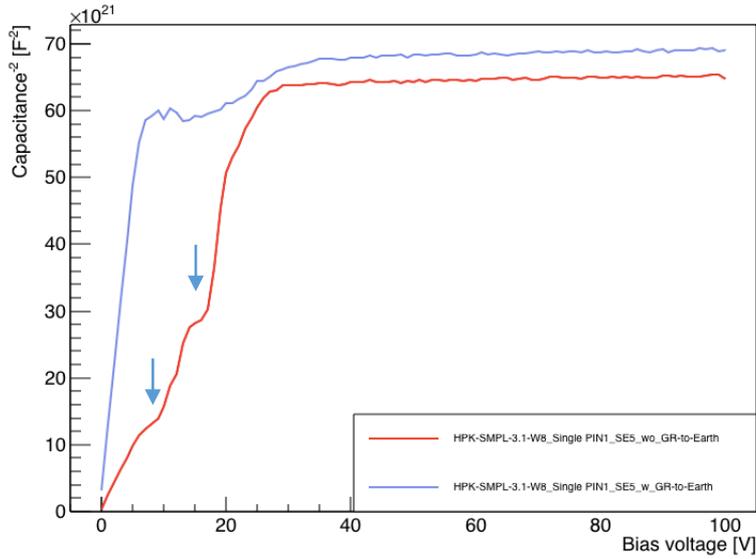
Two guard rings

Legend:

- GR floating
- GR grounded



Guard rings for PIN1_SE5



Same layout as LG1_SE5
Two guard rings

Legend:

- GR floating
- GR grounded

