The Silicon Detectors

high track density

↳ **50 micron readout pitch**

required act. area 5cm • 7cm

↳ **55 and 52 micron pitch**

required stereo angle

↳ **2.5 degree rotation**

high and inhomog. radiation

↳ **polysilicon biasing**

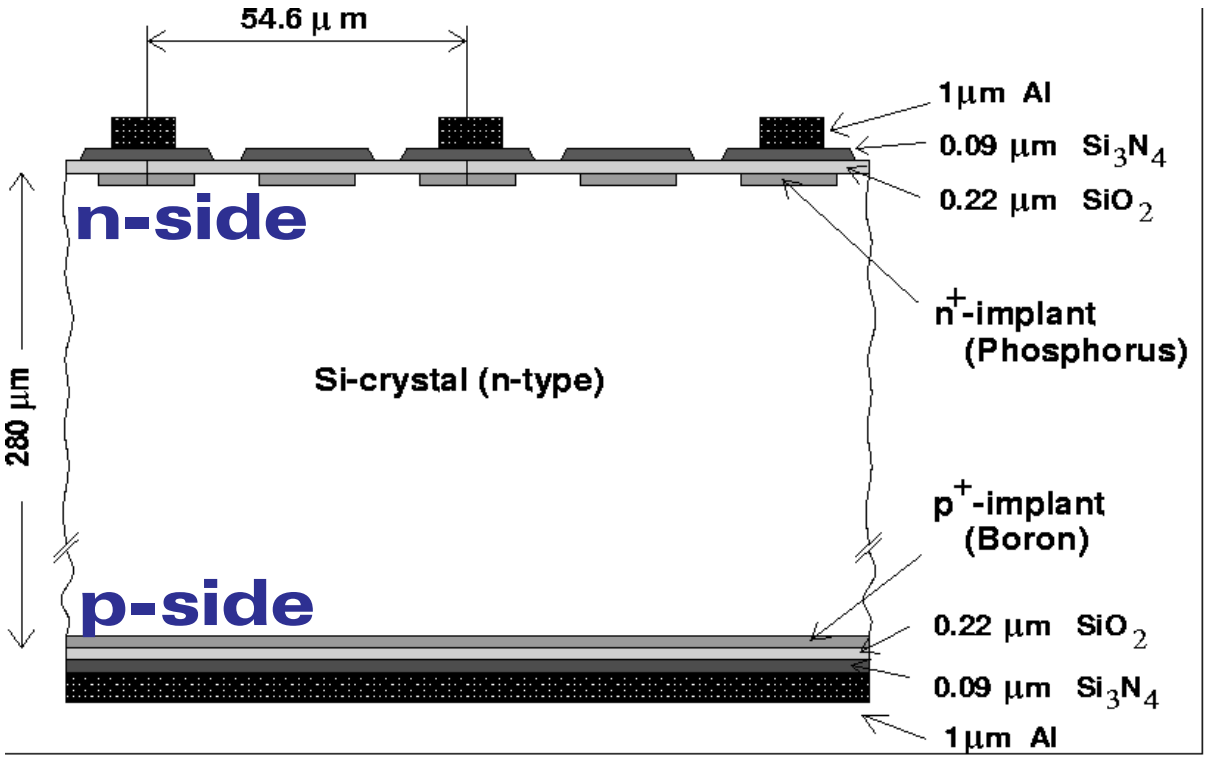
↳ **multiple guard rings**

↳ **burst protection**

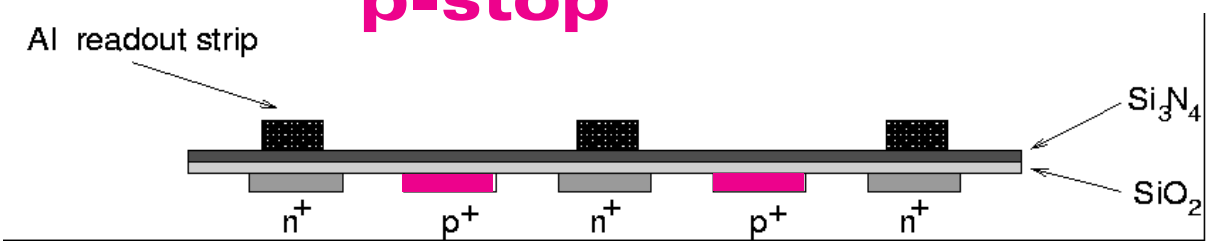
↳ **intermediate strips**

Resolution is not the issue !

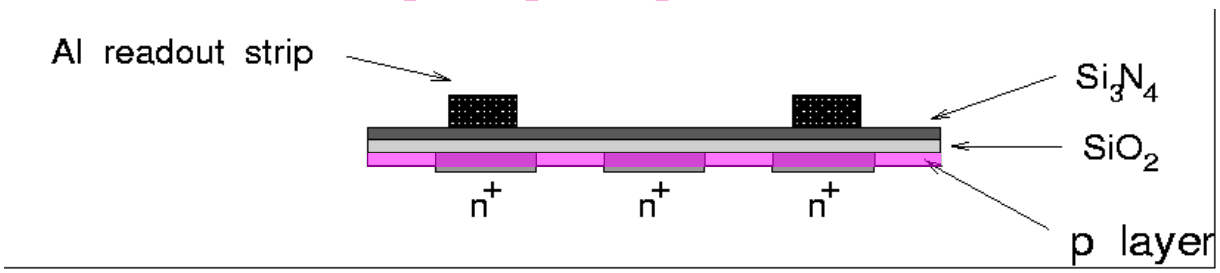
Silicon Technology



p-stop

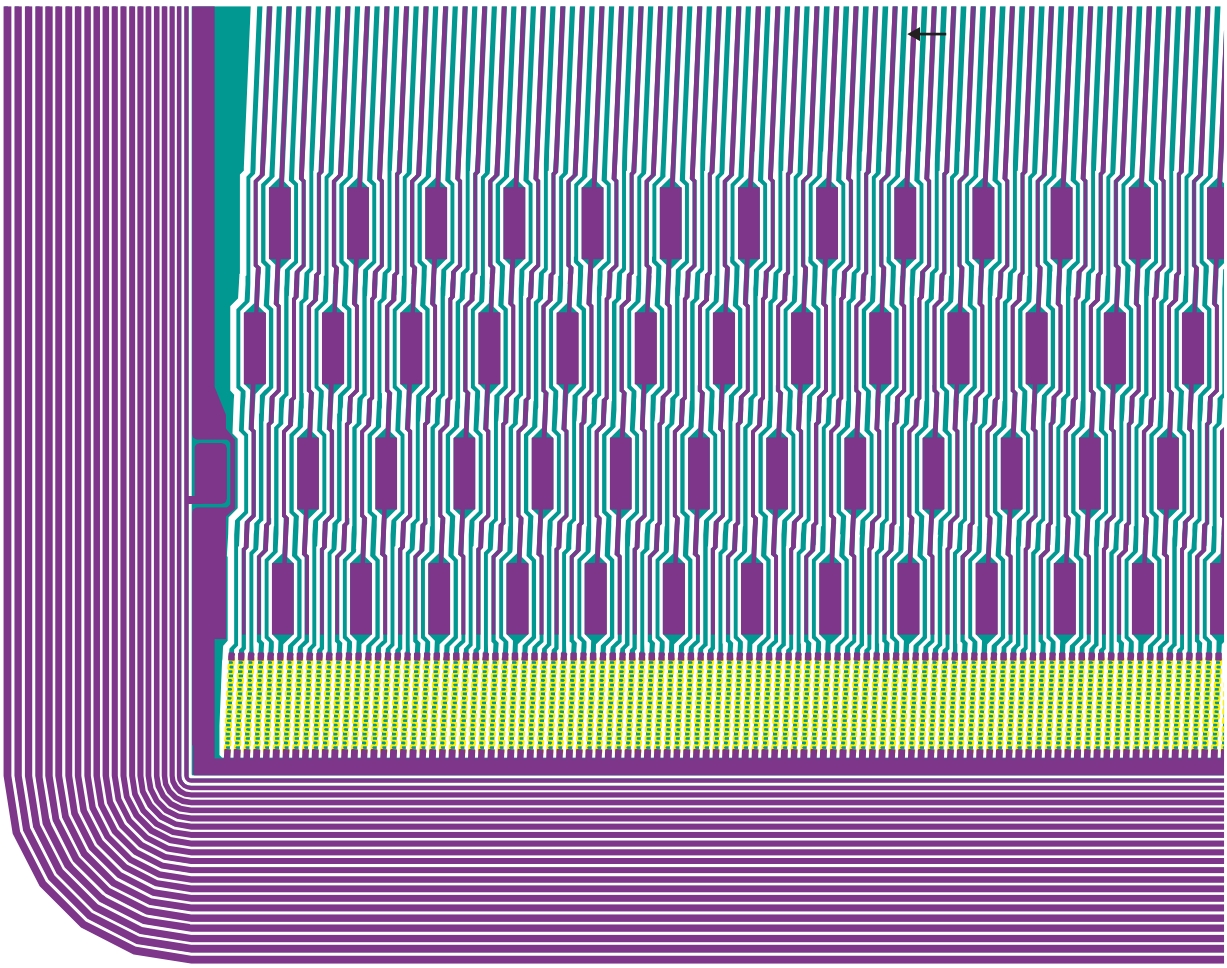


p-spray



Silicon Geometry

n-side



p-spray detector with intermediate strips.
Breakthrough voltage increases with irradiation.
500 Volt and more possible.

Silicon QC

- QC done by manufacturer !
  - IV curves
  - strip integrity
  - strip isolation
  - polysilicon resistors
- Criteria
  - break-through voltage
  - shape of IV curve
  - less than 10 bad strips/side
  - polysilicon 1.2±0.5 MΩ
- Some cross-checks at the beginning — no problems

Producers: Sintef/HLL