Circuit Design

No off-the-shelf instruments to measure current \( (i < 10\text{pA} \text{ at } f \approx 100\text{kHz}) \)

- Two stage amplifier: optimal trade-off between bandwidth and gain \( (A = 10^8, BW = 300\text{kHz}) \).
- Driven guard ring isolates input of the first stage opamp.
- Device die as close as possible to the first stage input.
- Output of the cantilever wirebonded directly to the first stage opamp input.