

PSRR & Noise Quick Rules

Ten field-proven rules for post-reg and measurement sanity.

- Declare noise bandwidth; compare μV_{rms} only with identical windows.
- Headroom = PSRR: avoid operating near dropout during HF evaluation.
- Switcher $\rightarrow$ bead/RC $\rightarrow$ LDO: expect ~15–35 dB improvement at 100 kHz–2 MHz when laid out well.
- Parallel capacitors: bulk + 0.1 μF close to pins; mind ESL and loop area.
- Keep NR/BYP 10–100 nF; larger means slower start—verify rail timing.
- For ceramic-only outputs, stay inside the C/ESR stability window across temp.
- Use ground-spring probing; long leads exaggerate ripple and spikes.
- State load step (ΔI , Δt) and observe $\Delta V \approx \Delta I \cdot ESR + \Delta I \cdot \Delta t / C$ for sizing.
- Separate analog/digital returns; Kelvin-sense the quiet load if possible.
- Validate at cold/hot, min/max VIN, light/heavy loads—then lock the BOM.