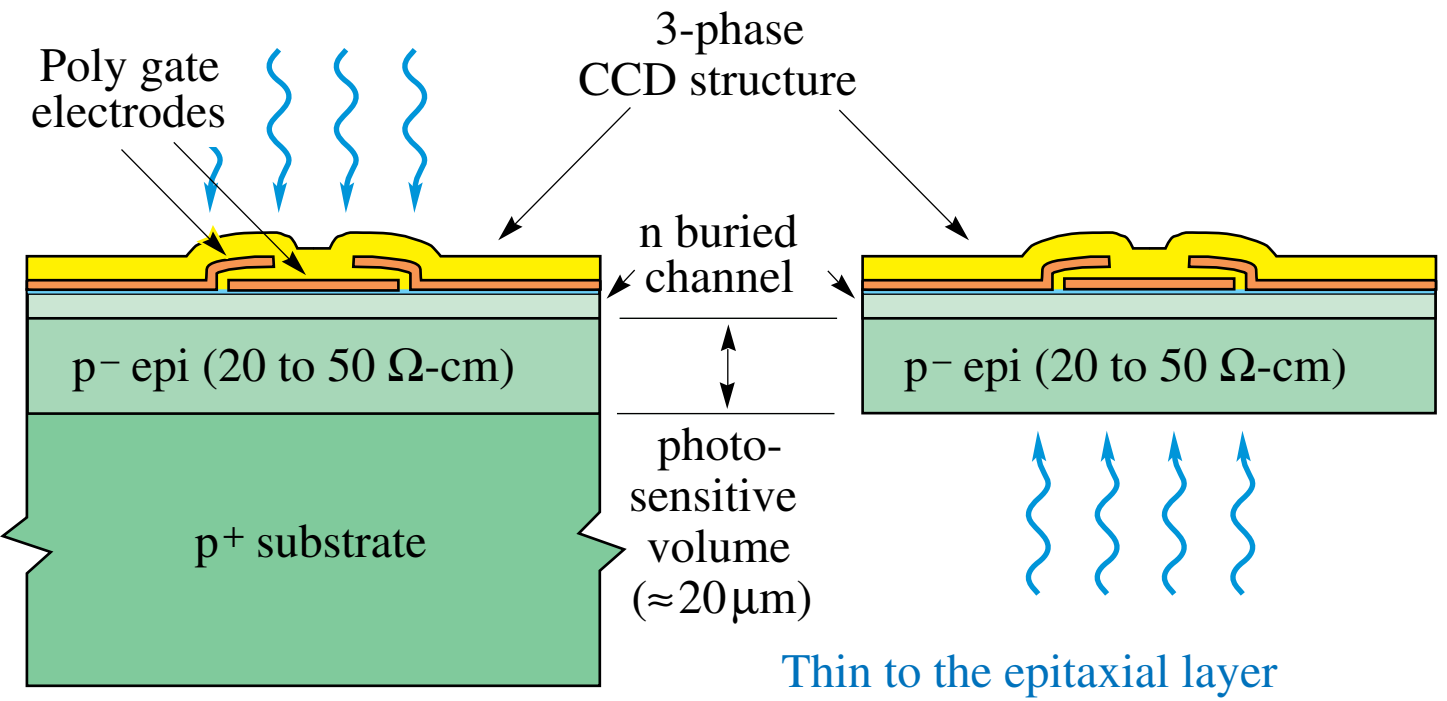
Front-illuminated CCD:

Thinned CCD with back-illumination:



Thin to the epitaxial layer thickness (≈20 μm)

Drawbacks:

1) Poor blue response due to absorption in polysilicon gate electrodes
2) Poor near-IR response due to thinness of the epitaxial layer
3 Interference patterns due to gate structure

Drawbacks:

1) Thinning is difficult and expensive
2) Associated flatness problems
3) Requires back-side charging
4) Poor near-IR response
5) Fringing
6) Lateral diffusion in field-free region (degraded PSF)
7) *e* buildup at rear surface locally inverts field

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