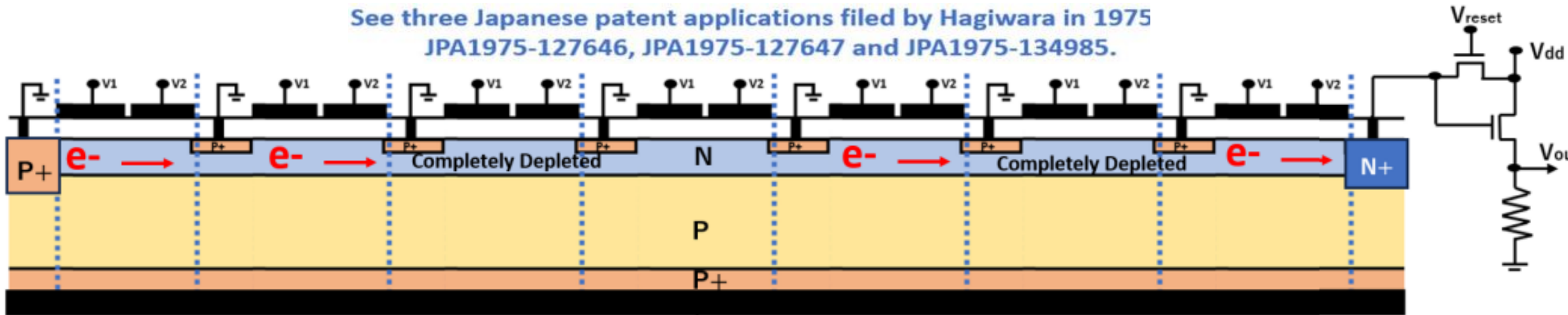
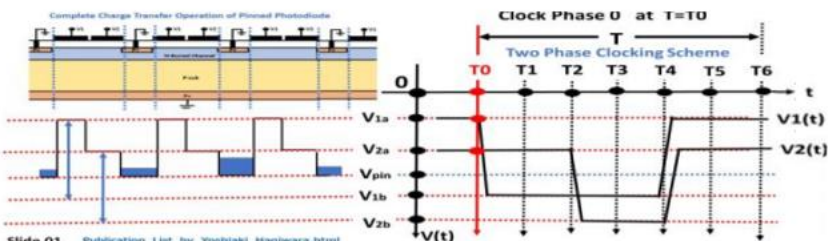


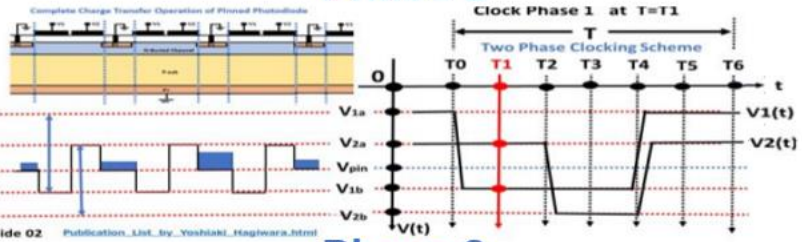
See three Japanese patent applications filed by Hagiwara in 1975
 JPA1975-127646, JPA1975-127647 and JPA1975-134985.



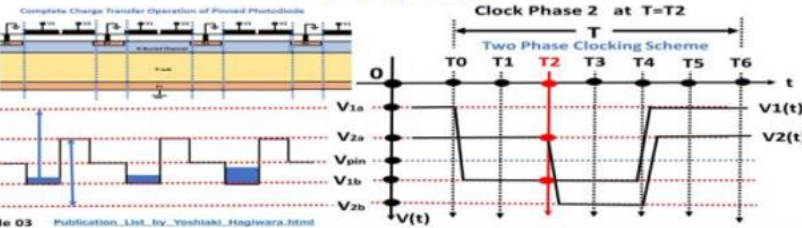
Phase 0



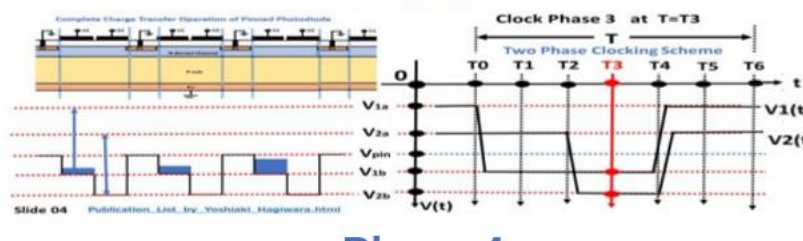
Phase 1



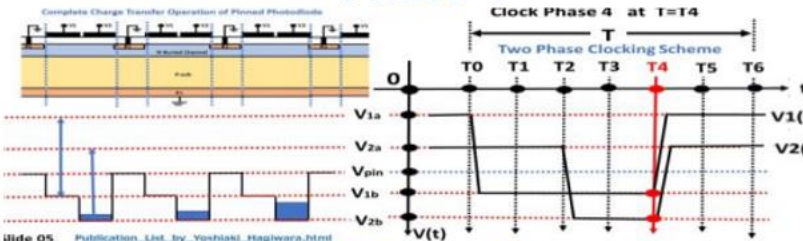
Phase 2



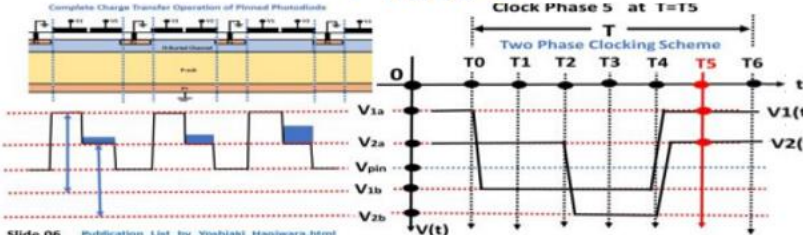
Phase 3



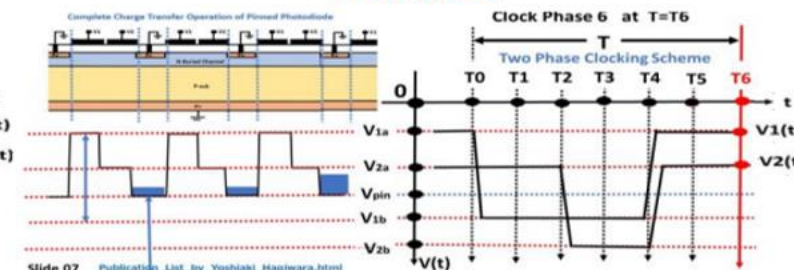
Phase 4



Phase 5



Phase 6



Complete Charge Transfer Operation of Two Phase Clocking Scheme is possible with only two electrodes and the Pinned Surface Buried N region. The impurity atom doping variation is not necessary to achieve the complete charge transfer directionality.

Pinned Photodiode invented in 1975 by Hagiwara at Sony made possible to operate the complete charge transfer without CCD type charge storage gate.