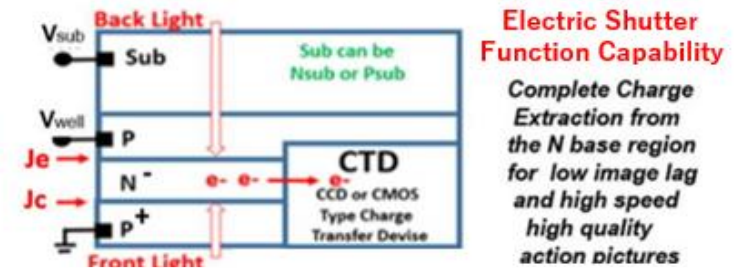
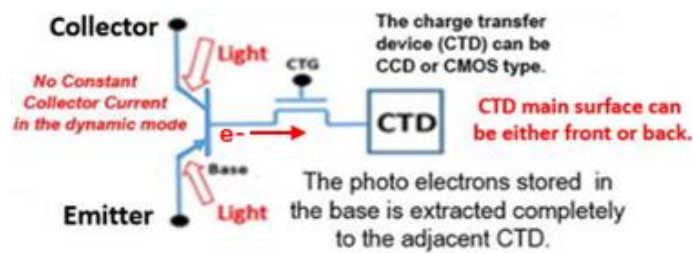


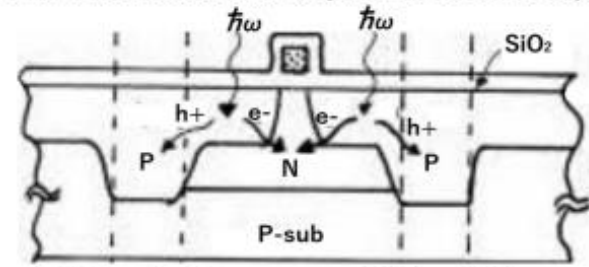
Invention and Historical Development Efforts of Pinned Buried Photodiode.

JPA1975-134985

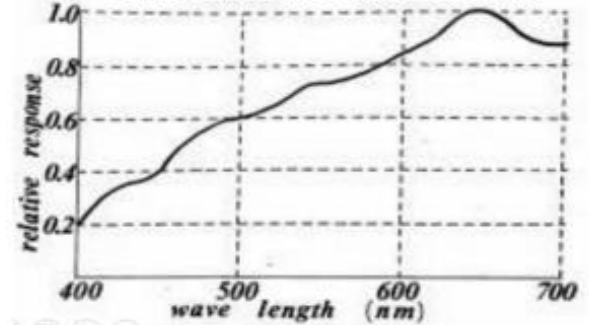
P+NP Double Junction
Dynamic Photo Transistor type
Pinned Buried Photodiode



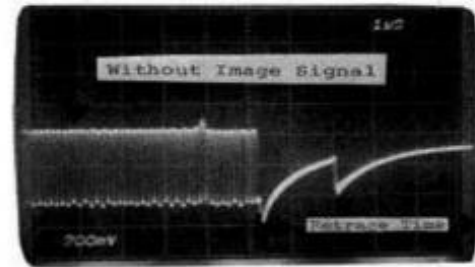
(A) Pinned-Surface and Buried-Storage PNP Photodiode with Adjacent Channel Stops



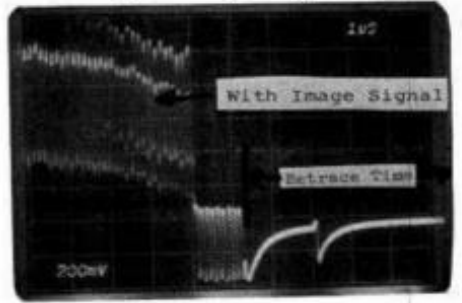
(B) Spectral Response with Very High Short-Wave Blue Light Sensitivity



(C) Signal Output with No Light showing Very Low Dark Current Feature



(D) Signal Output with Input Light showing No Image Lag Feature



Sony 1980 Video Movie has in one body an 8 mm VTR and One Chip FT CCD Image Sensor with the PNP Double Junction type Pinned Photodiode developed by Hagiwara in 1978

Yoshiaki Hagiwara, Motoaki Abe and Chikara Okada,
"A 380H X 488V CCD Imager with Narrow Channel Transfer Gates",
Proceeding of the 10th Conference on Solid State Devices, Tokyo 1978,
Japanese Journal of Applied Physics, Volume 18 Sup 18-1, pp. 335-340 November 1979.