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Effect of absorption by free carriers on the parameters of silicon photodiodes

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The calculation results predicts the transmissivity of heavily doped diffusion layers as function of their sheet resistance and wavelength of radiation with accounting free carrier absorption in diffused layers.
Its gives requirements to this layers parameters for reduce this effect on sensitivity silicon photodiodes.
It is shown also, that silicon structure transmissivity over 2.5 microns' wavelength is strong dependent on free carrier absorption in in diffused layers.

Keywords: multispectral photodetectors, silicon photodiodes, doped layers, CCD structures.

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