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Absorption of IR radiation in silicon-based diffusion layers

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The experimental data on transmissivity of heavily doped diffusion layers as function of there sheet resistance and wavelength of radiation with accounting free carrier absorbtion in in diffused layers are given. Its gives requirements to this layers parameters for reduce this effect on transmissivity. It is shown also, that silicon structure transmissivity data over 1.25 microns wavelength agree with theoretical results with accounting strong dependent free carrier mobilities on concentration doping impurities.

Keywords: Si, silicon, spectral transmission, free carriers, electron concentration, surface resistance.

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