

REFRACTIVE OPTICAL NON-LINEARITY IN Ge  
CRYSTALS CAUSED BY INTER-VALLEY  
REDISTRIBUTION OF "HOT" ELECTRONS

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S u m m a r y

A non-linearity of the refractive index in germanium crystals for infrared light caused by the redistribution of free electrons among equivalent valleys due to their heating by light waves has been calculated. The dependences of the non-linearity magnitude on the light wavelength and intensity, as well as on the electron concentration and the crystal temperature, have been given. The results of calculations give a proper explanation of the experimental dependence of the refractive index on the CO<sub>2</sub>-laser radiation intensity obtained earlier.