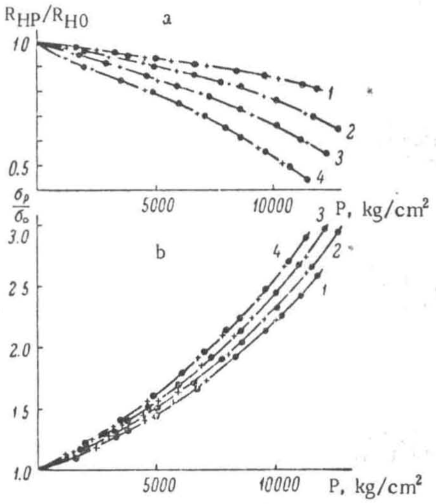

Fig. 3. Dependence of (a) the Hall constant and (b) conductivity for p-type specimens with carrier concentrations of $5.4 \cdot 10^{17}\,cm^{-3}$. T, °K: 1) 297; 2) 347; 3) 377; 4) 397.

band and the conduction band. The somewhat larger value of the change in effective mass for p-PbTe specimens (mean value 2.3% per 1000 kg/cm²) obtained in [1] is related to the effect of the second valence band.

2. The ratios of the concentrations and mobilities of the heavy and light holes are

$$\frac{p_{20}}{p_{10}} = 0.25, \quad \frac{u_{20}}{u_{10}} = 0.2.$$

3. The change in the energy gap between the two valence bands is

$$\frac{d\Delta E}{dP} = (7.0 \pm 0.5) \cdot 10^{-6} \ \text{eV/kg} \cdot \text{cm}^{-2}.$$

4. The absolute value of the forbidden-band width E_{g_0} = 0.29 eV (at 300°K) experimentally determined by us from the electrical properties is in satisfactory agreement with the corresponding value obtained from optical measurements [8], namely 0.29 and 0.32 eV for direct and indirect transitions respectively.

5. $$\frac{dE_g}{dT} = 4 \cdot 10^{-4} \ \text{eV/deg}.$$

6. The change in the width of the forbidden band with pressure is

$$\frac{dE_g}{dP} = -(8.0 \pm 0.5) \cdot 10^{-6} \ \text{eV/kg} \cdot \text{cm}^{-2};$$

at low pressures $d \ln E_g/dP$ is approximately 1.5 times larger than $d \ln m^*/dP$.

This value should be obtained if the two components of the effective mass tensor are principally determined by the matrix elements of the momentum calculated between the wave functions of the extrema of the valence and conduction bands.

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