Bipolar Junction Transistors. A Si p-n-p BJT with $A = 10^{-4}\ cm^2$ and base width 1 μm has $N_a = 10^{17}\ cm^{-3}$, $N_d = 10^{16}\ cm^{-3}$, $D_n = 5\ cm^2/s$, $D_p = 10\ cm^2/s$, $\tau_n = 0.1$ sec and $\tau_p = 1$ sec. Calculate the base current for $V_{EB} = 1$ V and $V_{CB} << 0$.

Suppose the BJT is connected as shown at right and V = 0.3 V Calculate the emitter current I_E.