Problem E11:

Use the approximation in Eq. 6-76 to find the transmission probability for particles incident on a rectangular potential barrier under the following conditions:

(a) electrons of energy $E = 3\,\text{eV}$ on a barrier $3.3\,\text{eV}$ high and $10\,\text{nm}$ wide:

(b) electrons of energy $E = 3\,\text{eV}$ on a barrier $5\,\text{eV}$ high and $10\,\text{nm}$ wide:

(c) electrons of energy $E = 3\,\text{eV}$ on a barrier $5\,\text{eV}$ high and $1\,\text{nm}$ wide:

(d) protons of energy $E = 3\,\text{eV}$ on a barrier $5\,\text{eV}$ high and $0.1\,\text{nm}$ wide: