Semiconductor Parameters

Material	E_g(eV)	B($cm^{-3}K^{-3/2}$)	n_i(cm^{-3}) @ RT
Si	1.1	5.23×10^{15}	1.5×10^{10}
GaAs	1.4	2.10×10^{14}	1.8×10^{6}
Ge	0.66	1.66×10^{15}	2.4×10^{13}

k - Boltzmann's Constant
$k = 1.38 \times 10^{-23}\ m^2\ kg\ s^{-2}\ K^{-1}$

q – electron charge
$q = 1.60 \times 10^{-19}$ coulombs (As)

T – Temperature in Kelvin
70°F → 21°C → 294K
Typically call Room Temp (RT) 300K (80 °F)

Diffusion coefficient électrons Si ≤ 36 cm^2/s
Diffusion coefficient holes Si ≤ 12 cm^2/s

Mobility electrons Si ≤ 1400 cm^2 / V s
Mobility holes Si ≤ 450 cm^2 / V s