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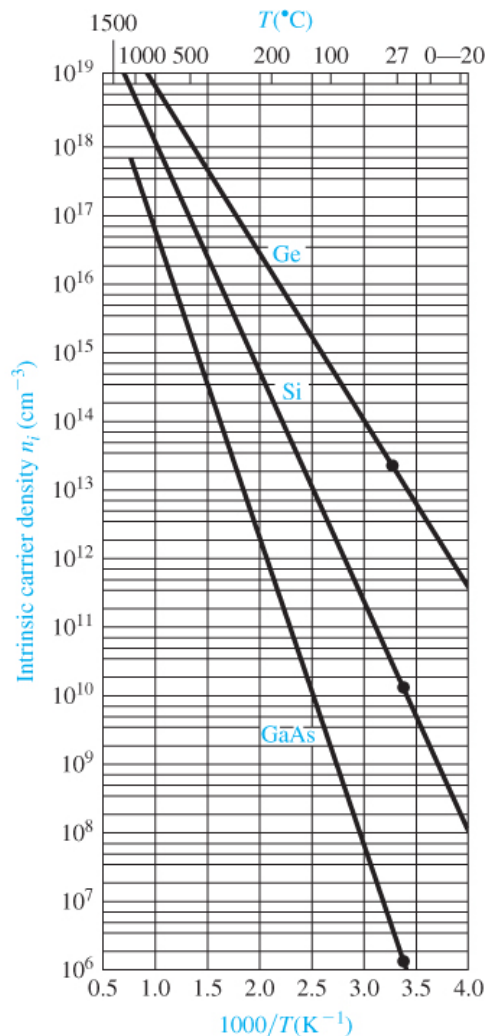
➤ Table 4.1 gives some typical values (@ 300 K?).

**Table 4.1** | Effective density of states function and density of states effective mass values

	$N_c$ (cm <sup>-3</sup> )	$N_v$ (cm <sup>-3</sup> )	$m_n^*/m_0$	$m_p^*/m_0$
Silicon	$2.8 \times 10^{19}$	$1.04 \times 10^{19}$	1.08	0.56
Gallium arsenide	$4.7 \times 10^{17}$	$7.0 \times 10^{18}$	0.067	0.48
Germanium	$1.04 \times 10^{19}$	$6.0 \times 10^{18}$	0.55	0.37

**Table 4.2** | Commonly accepted values of  $n_i$  at  $T = 300$  K

Silicon	$n_i = 1.5 \times 10^{10}$ cm <sup>-3</sup>
Gallium arsenide	$n_i = 1.8 \times 10^6$ cm <sup>-3</sup>
Germanium	$n_i = 2.4 \times 10^{13}$ cm <sup>-3</sup>



**Figure 4.2** | The intrinsic carrier concentration of Ge, Si, and GaAs as a function of temperature. (From Sze [14].)