SiGe - Silicon Germanium

Electrical properties

Basic Parameter

$Si_{1-x}Ge_x$		*Remarks*	*Referens*
see also ***Si**. Electrical properties* and ***Ge**. Electrical properties*			
Breakdown field	$<3\cdot10^5$ V/cm	300 K	*Schaffler F. et al.(2001)*
Mobility electrons μ_n	$\approx$(1396-4315x) cm^2 V^{-1} s^{-1}	$\mathbf{0} \le x \le \mathbf{0.3}$, 300 K	
Mobility holes μ_p	$\approx$(450-865x) cm^2 V^{-1} s^{-1}	$\mathbf{0} \le x \le \mathbf{0.3}$, 300 K	
Diffusion coefficient electrons	(36-112x) cm^2/s	$\mathbf{0} \le x \le \mathbf{0.3}$, 300 K	
Diffusion coefficient holes	(12-22x) cm^2/s	$\mathbf{0} \le x \le \mathbf{0.3}$, 300 K	
Electron thermal velocity	$\approx2.4\cdot10^5$ m/s (x<0.85) $\approx3.1\cdot10^5$ m/s (x>0.85)	300 K	
Hole thermal velocity	(1.65+0,25x) m/s	300 K	