Supplementary Material: Model Parameters

Description	Parameter	Value
Grid spacing	an	1 A
Number of energy steps	NE	7201 $steps$
Fermi Energy	E_f	0.1 eV
Effective Density States, Si	Nc_{Si}	2.8e19 cm^{-3}
Effective Density States, Ge	Nc_{Ge}	1.04e19 cm^{-3}
Reference Temperature	T_p	300 K
Temperature Difference	dT	10 K

Table 1: Material parameters. Sources: † - [13]

Part	Material	Effective Mass	Relative Permitivity
Mat 1 (barrier)	Silicon ⟨001⟩	$0.91m_e$ ††	11.7 †
Mat 2 (well)	Germanium ⟨001⟩	$0.95m_e$ ††	16.0 ††
Contacts	Silicon ⟨001⟩	$0.91m_e$ ††	11.7 †

Table 2: Electronic NEGF material parameters. Sources: † - [13],†† - [3]

Part	Material	Mass (kg)	Atoms/basis	C_o (J)	d_i (nm)	d_e (nm)
Mat 1	Silicon ⟨001⟩	$1.69{\cdot}10^{-26}$	2	49.1†	0.543	0.235
Mat 2	Germanium ⟨001⟩	$4.37{\cdot}10^{-26}$	2	47.5†	0.565	0.244
Contacts	Silicon ⟨001⟩	$1.69{\cdot}10^{-26}$	2	49.1†	0.543	0.235

Table 3: Phonon NEGF material parameters. Sources: † - [8]

Part	Material	Acoustic Def Potential (eV)	Optical Def Potential (eV/m)
Mat 1	Silicon ⟨001⟩	9.0 †	$0.5{\cdot}10^{10}$ †
Mat 2	Germanium ⟨001⟩	9.0 †	$0.79{\cdot}10^{10}$ †

Table 4: Electronic NEGF scattering deformation potentials for each material. Sources: † - [11, 10]