

	Indium Phosphide	Gallium Arsenide	Indium Phosphide	Gallium Arsenide	Gallium Arsenide	Indium	Indium Arsenide	Aluminium arsenide	Ar-	Aluminium(x) Gallium(1 - x) Arsenide (x < 0.45)	Aluminium(x) Gallium(1 - x) Arsenide (x > 0.45)	Gallium phosphide	Phosphide	Gallium Phosphide	Indium	Silicon	Germanium
Energy gap E_g	[1.344]	$[1.35] + [-1.068]x + [0.758]x^2 + [-0.069]xy + [0.078]y^2 + 0.0x^3 + [-0.332]x^2y + [0.03]xy^2 + 0.0y^3$	$[1.424]$	$[0.36] + [0.63]x + [0.43]x^2$	$[0.354]$			[2.153, 2.363]		$[1.424] + [1.247]x + [0.0]x^2$	$[1.9] + [0.125]x + [0.143]x^2$	[2.26, 2.272]		[1.344]		[1.1242]	[0.661, 0.664]
Electron affinity χ	[4.38]	N/A		[4.07]	$[4.9] + [-0.83]x + [0.0]x^2$		[4.9]	N/A		$[4.07] + [-1.1]x + [0.0]x^2$	$[3.64] + [-0.14]x + [0.0]x^2$	[3.8]		$[4.38] + [-0.58]x + [0.0]x^2$		[4.05]	[4.0]
Electron mobility μ_n	[4000.0, 5400.0]	[4000.0, 11000.0]		[2000.0, 8500.0]	$[40000.0] + [-80700.0]x + [49200.0]x^2$		[20000.0, 40000.0]	[75, 293]		$[8000.0] + [-22000.0]x + [10000.0]x^2$	$[-255] + [1160]x + [-720]x^2$	[160, 250]		[50, 1000]		[1400, 1450]	[3800, 3900]
Hole mobility μ_p	[190, 200]	[50, 300]		[400, 450]	[300, 400]		[100, 500]	[105]		$[370] + [-970]x + [740]x^2$	$[370] + [-970]x + [740]x^2$	[135, 150]		[6, 40]		[370, 450]	[1800, 1900]
Intrinsic carrier concentration n_i	[13000000.0]	[10000000.0, 10000000000000.0]		[2100000.0]	$[2100000.0, 100000000000000.0]$		[100000000000000.0]	N/A		[250.0, 2100000.0]	[43.0, 250.0]	[2]		N/A		[10200000000.0]	$[2000000000000.0, 23300000000000.0]$
Electron lifetime τ_n	[1e-08, 2e-09]	N/A		[5e-09, 2.5e-07]	N/A		[3e-08]	N/A		[5e-09, 3e-08]	N/A	[1e-07]		N/A		[1e-09, 0.001]	[0.001]
Hole lifetime τ_p	[3e-06]	N/A		[3e-06]	[10]		[3e-06]	N/A		[1e-09, 2e-08]	N/A	[1e-06]		N/A		[1e-09, 0.001]	[0.001]
(Static) relative permittivity ϵ_r	[12.56]	[12.5, 13.94]		[12.8, 12.9]	$[15.1] + [-2.87]x + [0.67]x^2$		[15.15]	[10.1]		$[12.9] + [-2.84]x + [0.0]x^2$	$[12.9] + [-2.84]x + [0.0]x^2$	[11.11]		$[12.5] + [-1.4]x + [0.0]x^2$		[11.7]	[16.2]
Surface recombination velocity $S_{p/n}$	[5000.0, 1000000.0]	[10000.0, 100000.0]		[10000.0, 1000000.0]	[10000.0]		[100.0, 10000.0]	N/A		[400000.0]	N/A	[400000.0, 2000000.0]		[20000.0, 50000.0]		[100.0, 80000.0]	[10.0, 1000000.0]
	Indium Phosphide	Gallium Arsenide	Indium Phosphide	Gallium Arsenide	Gallium Arsenide	Indium	Indium Arsenide	Aluminium arsenide	Ar-	Aluminium(x) Gallium(1 - x) Arsenide (x < 0.45)	Aluminium(x) Gallium(1 - x) Arsenide (x > 0.45)	Gallium phosphide	Phosphide	Gallium Phosphide	Indium	Silicon	Germanium
Energy gap E_g	eV	eV		eV	eV		eV	eV		eV	eV	eV		eV		eV	eV
Electron affinity χ	eV	N/A		eV	eV		eV	N/A		eV	eV	eV		eV		eV	eV
Electron mobility μ_n	$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$
Hole mobility μ_p	$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$	$cm^2/V/s$		$cm^2/V/s$		$cm^2/V/s$	$cm^2/V/s$
Intrinsic carrier concentration n_i	cm^{-3}	cm^{-3}		cm^{-3}	cm^{-3}		cm^{-3}	N/A		cm^{-3}	cm^{-3}	cm^{-3}		N/A		cm^{-3}	cm^{-3}
Electron lifetime τ_n	s	N/A		s	N/A		s	N/A		s	N/A	s		N/A		s	s
Hole lifetime τ_p	s	N/A		s	s		s	N/A		s	N/A	s		N/A		s	s
(Static) relative permittivity ϵ_r	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A		N/A		N/A	N/A
Surface recombination velocity $S_{p/n}$	cm/s	cm/s		cm/s	cm/s		cm/s	N/A		cm/s	N/A	cm/s		cm/s		cm/s	cm/s
	Indium Phosphide	Gallium Arsenide	Indium Phosphide	Gallium Arsenide	Gallium Arsenide	Indium	Indium Arsenide	Aluminium arsenide	Ar-	Aluminium(x) Gallium(1 - x) Arsenide (x < 0.45)	Aluminium(x) Gallium(1 - x) Arsenide (x > 0.45)	Gallium phosphide	Phosphide	Gallium Phosphide	Indium	Silicon	Germanium
Energy gap E_g	[1, 2]	[2]		[1, 2]	[2]		[1, 2]	[1]		[2]	[2]	[1, 2]		[2]		[1, 2]	[1, 2]
Electron affinity χ	[2]	[N/A]		[2]	[2]		[2]	[N/A]		[2]	[2]	[2]		[2]		[2]	[2]
Electron mobility μ_n	[1, 2]	[2]		[1, 2]	[2]		[1, 2]	[1]		[2]	[2]	[1, 2]		[2]		[1, 2]	[1, 2]
Hole mobility μ_p	[1, 2]	[2]		[1, 2]	[2]		[1, 2]	[1]		[2]	[2]	[1, 2]		[2]		[1, 2]	[1, 2]
Intrinsic carrier concentration n_i	[2]	[2]		[1, 2]	[2]		[2]	[N/A]		[2]	[2]	[2]		[N/A]		[1, 2]	[1, 2]
Electron lifetime τ_n	[2]	[N/A]		[2]	[N/A]		[2]	[N/A]		[2]	[N/A]	[2]		[N/A]		[2]	[2]
Hole lifetime τ_p	[2]	[N/A]		[2]	[2]		[2]	[N/A]		[2]	[N/A]	[2]		[N/A]		[2]	[2]
(Static) relative permittivity ϵ_r	[1, 2]	[2]		[1, 2]	[2]		[1, 2]	[1]		[2]	[2]	[1, 2]		[2]		[2]	[2]
Surface recombination velocity $S_{p/n}$	[2]	[2]		[2]	[2]		[2]	[N/A]		[2]	[N/A]	[2]		[2]		[2]	[2]
	Indium Phosphide	Gallium Arsenide	Indium Phosphide	Gallium Arsenide	Gallium Arsenide	Indium	Indium Arsenide	Aluminium arsenide	Ar-	Aluminium(x) Gallium(1 - x) Arsenide (x < 0.45)	Aluminium(x) Gallium(1 - x) Arsenide (x > 0.45)	Gallium phosphide	Phosphide	Gallium Phosphide	Indium	Silicon	Germanium
Energy gap E_g	300 K	300 K Ga_ _{x} In_ _{1-x} As_ _{y} P_ _{1-y}		300 K	300 K Ga_ _{x} In_ _{1-x} As		295 K	300 K Gamma->X, 295 K Gamma->L		N/A	N/A	300 K		Taken from Ga_ _{0.47} In_ _{0.53} As_ _{0} P_ _{1}		300 K	300 K - 291 K
Electron affinity χ	300 K	N/A		300 K	300 K Ga_ _{x} In_ _{1-x} As		300 K	N/A		300 K	300 K	300 K		300 K Ga_ _{x} In_ _{1-x} P		300 K	300 K
Electron mobility μ_n	300 K	indicative		300 K	300 K Ga_ _{x} In_ _{1-x} As		300 K	300 K		300 K	300 K	N/A		300 K		300 K	300 K
Hole mobility μ_p	300 K	indicative		300 K	300 K		300 K	300 K		300 K	300 K	N/A		300 K		300 K	300 K
Intrinsic carrier concentration n_i	N/A	indicative		300 K	300 K		N/A	N/A		300 K indicative	300 K indicative	300 K		N/A		300 K	300 K

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		Indium Phosphide	Gallium Arsenide phosphide	Indium Phosphide	Gallium Arsenide	Gallium Arsenide	Indium Arsenide	Aluminium arsenide	Aluminium(x) Gallium(1 - x) Arsenide (x < 0.45)	Aluminium(x) Gallium(1 - x) Arsenide (x > 0.45)	Gallium Phosphide	Gallium Phosphide	Indium Phosphide	Silicon	Germanium
Electron lifetime τ_n	lifetime	longest lifetime	N/A		longest lifetime	N/A	longest lifetime	N/A	300 K, indicative	N/A	longest lifetime	N/A		falls as donor concentration increases	300 K, longest lifetime
Hole lifetime τ_p	lifetime	longest lifetime	N/A		longest lifetime	longest lifetime	longest lifetime	N/A	300 K, indicative	N/A	longest lifetime	N/A		falls as acceptor concentration increases	300 K, longest lifetime
(Static) relative permittivity ϵ_r	relative permittivity	300 K	300 K		300 K	300 K, $\text{Ga}_{0.5}\text{In}_{0.5}\text{As}$	300 K	N/A	300 K	300 K	300 K	300 K, $\text{Ga}_{0.5}\text{In}_{0.5}\text{P}$	300 K	300 K	300 K
Surface recombination velocity $S_{p/n}$	recombination velocity	indicative	indicative		indicative	indicative	indicative	N/A	free surface	N/A	indicative	indicative		indicative	indicative

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