

Russian tunnel diodes

This is a collection of characteristic data for Russian tunnel diodes. Most of these are available from various surplus sellers, often on ebay.

Schema of type designations:

- Gxxxx = Germanium, Commercial grade
- 1xxxx = Germanium, Military grade
- Axxxx = Gallium Arsenide, Commercial grade
- 3xxxx = Gallium Arsenide, Military grade

- xl1xx (like AI101) are for amplifiers
- xl2xx (like AI201) are for generators
- xl3xx (like AI301, GI306) are for switching circuits or general use
- xl4xx are Backward Diodes for switching circuit and general use

Type	Alt.Type	Material	Use	I_p	V_p	V_{pp}	I_p / I_v	R_d	C_t	L	f	I_{FS}	I_{FC}	I_R	Temp
1П103А (1И103А)		Ge	Amplifier	1.3—1.7 mA	90 mV	-	4	6 Ω	T 1-2 pF C 0.42-0.58pF	0.2 nH	10 GHz				
1П103В/1П103V (1И103Б)	Г1103В/Г1103V (ГИ103Б)	Ge	Amplifier	1.3—1.7 mA	90 mV	-	4	8 Ω	T 0.7-1.3 pF C 0.42-0.58pF	0.2 nH	20 GHz				
1П104А (1И104А)		Ge	Amplifier	1.3—1.7 mA	90 mV	-	4	6 Ω	T 0.8—1.9 pF C 0.42-0.58pF	0.2 nH	3—15 GHz				
1П304А (1И304А)	Г1304А (ГИ304А)	Ge	Switching	4.5—5.1 mA	420 mV				< 20 pF						+60°C
1П304В/1П304V (1И304Б)	Г1304В/Г1304V (ГИ304Б)	Ge	Switching	4.8—5.4 mA	56 mV	0.4 V	8		< 20 pF					10 mA	+100°C
1П305А (1И305А)		Ge	Switching	9.2—10.4 mA	70 mV	0.4 V	8		< 30 pF					20 mA	+100°C

1I305B/1I305V (1I305Б)		Ge	Switching	9.6–10.8 mA	70 mV	0.4 V	8		< 30 pF					20 mA	+100°C
1I307A (1I307А)	GI307A (ГИ307А)	Ge	Switching	1.8–2.2 mA	65 mV	0.4 V	7		< 20 pF						+100°C
1I308A (1I308А)	GI308A (ГИ308А)	Ge	Switching	4.5–5.5 mA	85 mV	0.43 V	9		1.5–5 pF	0.25 nH					+85°C
1I308B (1I308Б)	GI308B (ГИ308Б)	Ge	Switching	4.5–5.5 mA			5		0.7–2.0 pF						+70°C
1I308V (1I308В)	GI308V (ГИ308В)	Ge	Switching	10 mA			5		4.0–10 pF						+70°C
1I308G (1I308Г)	GI308G (ГИ308Г)	Ge	Switching	10 mA			5		1.5–5.0 pF						+70°C
1I308D (1I308Д)	GI308D (ГИ308Д)	Ge	Switching	10 mA			5		0.8–2.0 pF						+70°C
1I308E (1I308Е)	GI308E (ГИ308Е)	Ge	Switching	20 mA			5		3.0–15 pF						+70°C
1I308J (1I308Ж)	GI308J (ГИ308Ж)	Ge	Switching	20 mA			5		1.0–4.0 pF						+70°C
1I308I (1I308И)	GI308I (ГИ308И)	Ge	Switching	50 mA			5		5.0–20 pF						+70°C
1I308K (1I308К)	GI308K (ГИ308К)	Ge	Switching	50 mA			5		2.3–8.0 pF						+70°C
3I101A (3I101А)	AI101A (АИ101А)	GaAs	Amplifier	0.75–1.25 mA	160 mV		5	24 Ω	3 pF	1.3 nH					+85°C
3I101B/3I101V (3I101Б)	AI101B/AI101V (АИ101Б)	GaAs	Amplifier	1.7–2.3 mA	160 mV		6	16 Ω	< 5 pF						+85°C
3I101D (3I101Д)	AI101D (АИ101Д)	GaAs	Amplifier	1.7–2.3 mA	160 mV		5	14 Ω	2.5–10 pF	1.3 nH					+85°C
3I101E (3I101Е)	AI101E (АИ101Е)	GaAs	Amplifier	4.5–5.5 mA	180 mV		5	10 Ω	2–6 pF	1.3 nH					+85°C
3I101I (3I101И)	AI101I (АИ101И)	GaAs	Amplifier	4.5–5.5 mA	160 mV		6	7 Ω	4.5–13 pF	1.3 nH					+85°C
3I201A (3I201А)	AI201A (АИ201А)	GaAs	Oscillator	9–11 mA	200 mV		10	8 Ω	3.5 pF	1.3 nH					+85°C
3I201B (3I201Б)	AI201B (АИ201Б)	GaAs	Oscillator	9–11 mA	180		10	8 Ω	2.5–6 pF	1.3 nH					+100°C

					mV													
3I201V (3И201В)	AI201V (AI201В)	GaAs	Oscillator	9–11 mA	180 mV		10	8 Ω	4.5–10 pF	1.3 nH								+100° C
3I201G (3И201Г)	AI201G (AI201Г)	GaAs	Oscillator	16–22 mA	210 mV		10	5 Ω	< 4 pF	1.3 nH								+85° C
3I201D (3И201Д)	AI201D (AI201Д)	GaAs	Oscillator	16–22 mA	200 mV		10	5 Ω	< 4 pF	1.3 nH								+85° C
3I201E (3И201Е)	AI201D (AI201Е)	GaAs	Oscillator	16–22 mA	200 mV		10	4 Ω	5–12 pF	1.3 nH								+85° C
3I201SH/3I201J (3И201Ж)		GaAs	Oscillator	45–55 mA	260 mV		10	2.5 Ω	< 15 pF	< 1.3 nH								+100° C
3I201K (3И201К)	AI201K (AI201К)	GaAs	Oscillator	90–110 mA	330 mV		10	2.2 Ω	< 15 pF	1.3 nH								+85° C
3I201L (3И201Л)	AI201L (AI201Л)	GaAs	Oscillator	90–110 mA	330 mV		10	2.2 Ω	10–40 pF	1.3 nH								+85° C
	AI301A (AI301А)	GaAs	Switching	2 mA	180 mV	0.65 V	8		< 12 pF	< 1.5 nH							-	+70° C
	AI301B/AI301V (AI301Б)	GaAs	Switching	5 mA	180 mV	0.85 – 1.15 V	8		< 25 pF	< 1.5 nH							-	+70° C
	AI301G (AI301Г)	GaAs	Switching	10 mA	180 mV	0.8 V	8		< 50 pF	< 1.5 nH							-	+70° C
3I306E (3И306Е)		GaAs	Switching	1.8–2.2 mA	170 mV	0.85 V	8		4–12 pF			2.4 mA	1.8 mA	4 mA				+100° C
3I306G (3И306Г)		GaAs	Switching	2 mA	170 mV	0.85 V	8		< 8 pF			0.8 mA	0.8 mA	4 mA				+100° C
3I306SH/3I306J (3И306Ж)		GaAs	Switching	5 mA	170 mV	0.85 V	8		< 15 pF			2 mA	2 mA	20 mA				+100° C
3I306K (3И306К)		GaAs	Switching	4.5–5.5 mA	170 mV	0.85 V	8		8–25 pF			6 mA	4.5 mA	10 mA				+100° C

					mV										
3I306L (3И306Л)		GaAs	Switching	9–11 mA	170 mV	0.85 V	8		< 12 pF			4 mA	4 mA	20 mA	+100° C
3I306M (3И306М)		GaAs	Switching	9–11 mA	170 mV	0.85 V	8		< 30 pF			4 mA	4 mA	20 mA	+100° C
3I306N (3И306Н)		GaAs	Switching	9–11 mA	170 mV	0.85 V	8		15–50 pF			12 mA	9 mA	20 mA	+100° C
3I306R (3И306Р)		GaAs	Switching	4.5–5.5 mA	170 mV	0.85 V	8		4–25 pF			6 mA	4.5 mA	10 mA	+100° C

Type	Alt. Type	Material	Use	I _F	I _R	V _F	V _R	R _d	C _T	Temp
1I401A (1И401А)	GI401A (ГИ401А)	Ge	Back Diode	0.3 mA	4 mA	330 mV @ 0.1 mA	90 mV @ 1 mA		1.2–1.5 pF	-55...+70 C
1I404B/1I404V (1И404Б)	GI404B/GI404V (ГИ404Б)	Ge	Back Diode	0.8 mA	4 mA	350 mV @ 0.5 mA	75–105 mV @ 4 mA		1–2 pF	
3I402B/3I402V (3И402Б)		GaAs	Back Diode	0.05 mA	2 mA	600 mV @ 0.4 mA	250 mV @ 4 mA	14 Ω @ 100 mA	< 6 pF	
3I402G (3И402Г)	AI402G (АИ402Г)	GaAs	Back Diode	0.05 mA	2 mA	600 mV @ 0.4 mA	250 mV @ 4 mA		1.5–3.5 pF	
3I402E (3И402Е)	AI402E (АИ402Е)	GaAs	Back Diode							
3I402I (3И402И)	AI402I (АИ402И)	GaAs	Back Diode	0.05 mA	4 mA	600 mV @ 0.4 mA	250 mV @ 4 mA	14 Ω @ 100 mA	< 10 pF	