

1N5221B thru 1N5281B

T-11-11

**ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25°C unless otherwise noted. Based on dc measurements at thermal equilibrium; lead length = 3/8"; thermal resistance of heat sink = 30°C/W) V<sub>F</sub> = 1.1 Max @ I<sub>F</sub> = 200 mA for all types.

JEDEC Type No. (Note 1)	Nominal Zener Voltage V <sub>Z</sub> @ I <sub>ZT</sub> Volts (Note 2)	Test Current I <sub>ZT</sub> mA	Max Zener Impedance		Max Reverse Leakage Current		Max Zener Voltage Temperature Coeff. θ <sub>VZ</sub> (%/°C) (Note 3)
			Z <sub>ZT</sub> @ I <sub>ZT</sub> Ohms	Z <sub>ZK</sub> @ I <sub>ZK</sub> = 0.25 mA Ohms	I <sub>R</sub> μA	V <sub>R</sub> Volts	
⇒ 1N5221B	2.4	20	30	1200	100	1	-0.085
1N5222B	2.5	20	30	1250	100	1	-0.085
⇒ 1N5223B	2.7	20	30	1300	75	1	-0.08
1N5224B	2.8	20	30	1400	75	1	-0.08
1N5225B	3	20	29	1600	50	1	-0.075
⇒ 1N5226B	3.3	20	28	1600	25	1	-0.07
1N5227B	3.6	20	24	1700	15	1	-0.065
⇒ 1N5228B	3.9	20	23	1900	10	1	-0.06
⇒ 1N5229B	4.3	20	22	2000	5	1	±0.055
⇒ 1N5230B	4.7	20	19	1900	5	2	±0.03
⇒ 1N5231B	5.1	20	17	1600	5	2	±0.03
⇒ 1N5232B	5.6	20	11	1600	5	3	+0.038
⇒ 1N5233B	6	20	7	1600	5	3.5	+0.038
⇒ 1N5234B	6.2	20	7	1000	5	4	+0.045
⇒ 1N5235B	6.8	20	5	750	3	5	+0.05
⇒ 1N5236B	7.5	20	6	500	3	6	+0.058
⇒ 1N5237B	8.2	20	8	500	3	6.5	+0.062
1N5238B	8.7	20	8	600	3	6.5	+0.065
⇒ 1N5239B	9.1	20	10	600	3	7	+0.068
⇒ 1N5240B	10	20	17	600	3	8	+0.075
1N5241B	11	20	22	600	2	8.4	+0.076
⇒ 1N5242B	12	20	30	600	1	9.1	+0.077
⇒ 1N5243B	13	9.5	13	600	0.5	9.9	+0.079
⇒ 1N5244B	14	9	15	600	0.1	10	+0.082
⇒ 1N5245B	15	8.5	16	600	0.1	11	+0.082
⇒ 1N5246B	16	7.8	17	600	0.1	12	+0.083
1N5247B	17	7.4	19	600	0.1	13	+0.084
⇒ 1N5248B	18	7	21	600	0.1	14	+0.085
1N5249B	19	6.6	23	600	0.1	14	+0.086
⇒ 1N5250B	20	6.2	25	600	0.1	15	+0.086
1N5251B	22	5.6	29	600	0.1	17	+0.087
⇒ 1N5252B	24	5.2	33	600	0.1	18	+0.088
1N5253B	25	5	35	600	0.1	19	+0.089
⇒ 1N5254B	27	4.6	41	600	0.1	21	+0.09
1N5255B	28	4.5	44	600	0.1	21	+0.091
⇒ 1N5256B	30	4.2	49	600	0.1	23	+0.091
⇒ 1N5257B	33	3.8	58	700	0.1	25	+0.092
⇒ 1N5258B	36	3.4	70	700	0.1	27	+0.093
1N5259B	39	3.2	80	800	0.1	30	+0.094
1N5260B	43	3	93	900	0.1	33	+0.095
1N5261B	47	2.7	105	1000	0.1	36	+0.095
1N5262B	51	2.5	125	1100	0.1	39	+0.096
1N5263B	56	2.2	150	1300	0.1	43	+0.096
1N5264B	60	2.1	170	1400	0.1	46	+0.097
1N5265B	62	2	185	1400	0.1	47	+0.097

(continued)

⇒ Preferred part

1N5221B thru 1N5281B

T-11-11

**ELECTRICAL CHARACTERISTICS — continued** ( $T_A = 25^\circ\text{C}$  unless otherwise noted. Based on dc measurements at thermal equilibrium; lead length = 3/8"; thermal resistance of heat sink = 30°C/W)  $V_F = 1.1$  Max @  $I_F = 200$  mA for all types.

JEDEC Type No. (Note 1)	Nominal Zener Voltage $V_Z$ @ $I_{ZT}$ Volts (Note 2)	Test Current $I_{ZT}$ mA	Max Zener Impedance		Max Reverse Leakage Current		Max Zener Voltage Temperature Coeff. $\theta_{VZ}$ (%/°C) (Note 3)
			$Z_{ZT}$ @ $I_{ZT}$ Ohms	$Z_{ZK}$ @ $I_{ZK} = 0.25$ mA Ohms	$I_R$ $\mu\text{A}$	$V_R$ Volts	
1N5266B	68	1.8	230	1600	0.1	52	+0.097
1N5267B	75	1.7	270	1700	0.1	56	+0.098
1N5268B	82	1.5	330	2000	0.1	62	+0.098
1N5269B	87	1.4	370	2200	0.1	68	+0.099
1N5270B	91	1.4	400	2300	0.1	69	+0.099
1N5271B	100	1.3	500	2600	0.1	76	+0.11
1N5272B	110	1.1	750	3000	0.1	84	+0.11
1N5273B	120	1	900	4000	0.1	91	+0.11
1N5274B	130	0.95	1100	4500	0.1	99	+0.11
1N5275B	140	0.9	1300	4500	0.1	106	+0.11
1N5276B	150	0.85	1500	5000	0.1	114	+0.11
1N5277B	160	0.8	1700	5500	0.1	122	+0.11
1N5278B	170	0.74	1900	5500	0.1	129	+0.11
1N5279B	180	0.68	2200	6000	0.1	137	+0.11
1N5280B	190	0.66	2400	6500	0.1	144	+0.11
1N5281B	200	0.65	2500	7000	0.1	152	+0.11

**NOTE 1. TOLERANCE**

The JEDEC type numbers shown indicate a tolerance of  $\pm 5\%$ . For tighter tolerance devices use suffixes "C" for  $\pm 2\%$  and "D" for  $\pm 1\%$ .

**NOTE 2. SPECIAL SELECTIONS AVAILABLE INCLUDE:**

1. Nominal zener voltages between those shown.
2. Nominal voltages at non-standard test currents.

**NOTE 3. TEMPERATURE COEFFICIENT ( $\theta_{VZ}$ )**

Test conditions for temperature coefficient are as follows:

- a.  $I_{ZT} = 7.5$  mA,  $T_1 = 25^\circ\text{C}$ ,  
 $T_2 = 125^\circ\text{C}$  (1N5221B through 1N5242B).
- b.  $I_{ZT} = \text{Rated } I_{ZT}$ ,  $T_1 = 25^\circ\text{C}$ ,  
 $T_2 = 125^\circ\text{C}$  (1N5243B through 1N5281B).

Device to be temperature stabilized with current applied prior to reading breakdown voltage at the specified ambient temperature.

**NOTE 4. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**

Nominal zener voltage is measured with the device junction in thermal equilibrium at the lead temperature of  $30^\circ\text{C} \pm 1^\circ\text{C}$  and 3/8" lead length.

**NOTE 5. ZENER IMPEDANCE ( $Z_Z$ ) DERIVATION**

$Z_{ZT}$  and  $Z_{ZK}$  are measured by dividing the ac voltage drop across the device by the ac current applied. The specified limits are for  $I_Z(\text{ac}) = 0.1 I_Z(\text{dc})$  with the ac frequency = 60 Hz.

For more information on special selections contact your nearest Motorola representative.