



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

1N5223B thru 1N5271B Zener Diode, 1/2 Watt ±5% Tolerance

Features:

- Zener Voltage 2.7 to 100V
- DO35 Package

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Operating Junction Temperature Range, T_{opr} -65° to $+200^\circ\text{C}$
 Storage Temperature Range, T_{stg} -65° to $+200^\circ\text{C}$
 DC Power Dissipation, P_D 500mW
 Derate Above 75°C $4.0\text{mW}/^\circ\text{C}$
 Forward Voltage ($I_F = 200\text{mA}$), V_F 1.1V

Electrical Characteristics: ($T_C = +25^\circ\text{C}$, unless otherwise specified)

Device Number	Nominal Zener Voltage $V_Z @ I_{ZT}$ (Note 1)	Zener Test Current (I_{ZT})	Maximum Dynamic Impedance (Note 3)		Maximum Leakage Current $I_R @ V_R$		Typical Temperature Coefficient (Note 2) α_{VZ}
			$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ 0.25\text{mA} (I_{ZK})$	μA	Volts	
	Volts	mA	Ohms	Ohms			%/ $^\circ\text{C}$
1N5223B	2.7	20	30	1300	75	1.0	-0.080
1N5225B	3.0	20	29	1600	50	1.0	-0.075
1N5226B	3.3	20	28	1600	25	1.0	-0.070
1N5227B	3.6	20	24	1700	15	1.0	-0.065
1N5228B	3.9	20	23	1900	10	1.0	-0.060
1N5229B	4.3	20	22	2000	5	1.0	± 0.055
1N5230B	4.7	20	19	1900	5	2.0	± 0.030

Note 1. 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 2. Test conditions for temperature coefficient are as follows:

a. $I_{ZT} = 7.5\text{mA}$, $T_1 = +25^\circ\text{C}$, $T_2 = +125^\circ\text{C}$ (1N5223B thru 1N5242B)

b. $I_{ZT} = \text{Rated } I_{ZT}$, $T_1 = +25^\circ\text{C}$, $T_2 = +125^\circ\text{C}$ (1N5243B thru 1N5271B)

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

Note 3. Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specific limits are for $I_Z(\text{AC}) = 0.1 I_Z(\text{DC})$ with the AC frequency = 60Hz.

Electrical Characteristics (Cont'd): ($T_C = +25^\circ\text{C}$, unless otherwise specified)

Device Number	Nominal Zener Voltage $V_z @ I_{zt}$ (Note 1)	Zener Test Current (I_{zt})	Maximum Dynamic Impedance (Note 3)		Maximum Leakage Current $I_R @ V_R$		Typical Temperature Coefficient (Note 2) α_{Vz}
			$Z_{zt} @ I_{zt}$	$Z_{zk} @ 0.25\text{mA} (I_{zk})$	μA	Volts	
	Volts	mA	Ohms	Ohms			%/ $^\circ\text{C}$
1N5231B	5.1	20	17	1600	5	2.0	± 0.030
1N5232B	5.6	20	11	1600	5	3.0	+0.038
1N5233B	6.0	20	7	1600	5	3.5	+0.038
1N5234B	6.2	20	7	1000	5	4.0	0.045
1N5235B	6.8	20	5	750	3	5.0	0.050
1N5236B	7.5	20	6	500	3	6.0	0.058
1N5237B	8.2	20	8	500	3	6.5	0.062
1B5238B	8.7	20	8	600	3	6.5	0.065
1N5239B	9.1	20	10	600	3	7.0	0.068
1N5240B	10	20	17	600	3	8.0	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	9.0	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	7.0	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	5.0	35	600	0.1	19	0.089

Note 1. 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 2. Test conditions for temperature coefficient are as follows:

a. $I_{zt} = 7.5\text{mA}$, $T_1 = +25^\circ\text{C}$, $T_2 = +125^\circ\text{C}$ (1N5223B thru 1N5242B)

b. $I_{zt} = \text{Rated } I_{zt}$, $T_1 = +25^\circ\text{C}$, $T_2 = +125^\circ\text{C}$ (1N5243B thru 1N5271B)

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

Note 3. Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specific limits are for $I_{Z(AC)} = 0.1 I_{Z(DC)}$ with the AC frequency = 60Hz.

Electrical Characteristics (Cont'd): ($T_C = +25^\circ\text{C}$, unless otherwise specified)

Device Number	Nominal Zener Voltage $V_Z @ I_{ZT}$ (Note 1)	Zener Test Current (I_{ZT})	Maximum Dynamic Impedance (Note 3)		Maximum Leakage Current $I_R @ V_R$		Typical Temperature Coefficient (Note 2) α_{VZ}
			$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ 0.25\text{mA} (I_{ZK})$	μA	Volts	
	Volts	mA	Ohms	Ohms			%/ $^\circ\text{C}$
1N5254B	27	4.6	41	600	0.1	21	0.090
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	3.0	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
1N5266B	68	1.8	230	1600	0.1	52	0.097
1N5267B	75	1.7	270	1700	0.1	56	0.098
1N5270B	91	1.4	400	2300	0.1	69	0.099
1N5271B	100	1.3	500	2600	0.1	76	0.110

Note 1. 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 2. Test conditions for temperature coefficient are as follows:

a. $I_{ZT} = 7.5\text{mA}$, $T_1 = +25^\circ\text{C}$, $T_2 = +125^\circ\text{C}$ (1N5223B thru 1N5242B)

b. $I_{ZT} = \text{Rated } I_{ZT}$, $T_1 = +25^\circ\text{C}$, $T_2 = +125^\circ\text{C}$ (1N5243B thru 1N5271B)

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

Note 3. Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specific limits are for $I_Z(\text{AC}) = 0.1 I_Z(\text{DC})$ with the AC frequency = 60Hz.

