



High-reliability discrete products
and engineering services since 1977

1N5221B(UR)-1N5281B(UR)

SILICON ZENER DIODES

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix. Available in surface mount by adding suffix "UR"
- Devices with guaranteed limits on all six parameters are indicated by suffix A for $\pm 10\%$ tolerance, suffix B for a $\pm 5\%$ tolerance, suffix C for a 2% tolerance and suffix D for a 1% tolerance.

MAXIMUM RATINGS

Operating and Storage Temperature	-65°C to +200°C
DC Power Dissipation	500 mW
Power Derating	3.33 mW/C° above 25°C
Forward Voltage @ 200mA	1.1 Volts

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Part Number ⁽¹⁾	Nominal Zener Voltage V _Z @ I _{ZT} Volts	Test Current I _{ZT} mA	Max Zener Impedance A&B Suffix Only ⁽²⁾		Max Reverse Leakage Current			Max Zener Voltage Temp. Coeff. (A&B Suffix Only) α_{VZ} (%/°C) ⁽³⁾	
					A, B, & D Suffix Only		Non Suffix		
			Z _{ZT} @ I _{ZT} Ohms	Z _{ZT} @ I _{ZK} =0.25mA Ohms	I _R μA	V _R @ Volts	I _R @ V _R Used For Suffix A μA		
						A	B,C & D		
1N5221B	2.4	20	30	1200	100	0.95	1.0	200	-0.085
1N5222B	2.5	20	30	1250	100	0.95	1.0	200	-0.085
1N5223B	2.7	20	30	1300	75	0.95	1.0	150	-0.080
1N5224B	2.8	20	30	1400	75	0.95	1.0	150	-0.080
1N5225B	3.0	20	29	1600	50	0.95	1.0	100	-0.075
1N5226B	3.3	20	28	1600	25	0.95	1.0	100	-0.070
1N5227B	3.6	20	24	1700	15	0.95	1.0	100	-0.065
1N5228B	3.9	20	23	1900	10	0.95	1.0	75	-0.060
1N5229B	4.3	20	22	2000	5.0	0.95	1.0	50	±0.055
1N5230B	4.7	20	19	1900	5.0	1.9	2.0	50	±0.030
1N5231B	5.1	20	17	1600	5.0	1.9	2.0	50	±0.030
1N5232B	5.6	20	11	1600	5.0	2.9	3.0	50	+0.038
1N5233B	6.0	20	7.0	1600	5.0	3.3	3.5	50	+0.038
1N5234B	6.2	20	7.0	1000	5.0	3.8	4.0	50	+0.045
1N5235B	6.8	20	5.0	750	3.0	4.8	5.0	30	+0.050
1N5236B	7.5	20	6.0	500	3.0	5.7	6.0	30	+0.058
1N5237B	8.2	20	8.0	500	3.0	6.2	6.5	30	+0.062
1N5238B	8.7	20	8.0	600	3.0	6.2	6.5	30	+0.065
1N5239B	9.1	20	10	600	3.0	6.7	7.0	30	+0.068
1N5240B	10	20	17	600	3.0	7.6	8.0	30	+0.075
1N5241B	11	20	22	600	2.0	8.0	8.4	30	+0.076
1N5242B	12	20	30	600	1.0	8.7	9.1	10	+0.077
1N5243B	13	9.5	13	600	0.5	9.4	9.9	10	+0.079
1N5244B	14	9.0	15	600	0.1	9.5	10	10	+0.082
1N5245B	15	8.5	16	600	0.1	10.5	11	10	+0.082
1N5246B	16	7.8	17	600	0.1	11.4	12	10	+0.083
1N5247B	17	7.4	19	600	0.1	12.4	13	10	+0.084
1N5248B	18	7.0	21	600	0.1	13.3	14	10	+0.085
1N5249B	19	6.6	23	600	0.1	13.3	14	10	+0.086
1N5250B	20	6.2	25	600	0.1	14.3	15	10	+0.086
1N5251B	22	5.6	29	600	0.1	16.2	17	10	+0.087
1N5252B	24	5.2	33	600	0.1	17.1	18	10	+0.088
1N5253B	25	5.0	35	600	0.1	18.1	19	10	+0.089
1N5254B	27	4.6	41	600	0.1	20	21	10	+0.090
1N5255B	28	4.5	44	600	0.1	20	21	10	+0.091
1N5256B	30	4.2	49	600	0.1	22	23	10	+0.091
1N5257B	33	3.8	58	700	0.1	24	25	10	+0.092
1N5258B	36	3.4	70	700	0.1	26	27	10	+0.093
1N5259B	39	3.2	80	800	0.1	29	30	10	+0.094
1N5260B	43	3.0	93	900	0.1	31	33	10	+0.095



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Part Number ⁽¹⁾	Nominal Zener Voltage $V_z @ I_{ZT}$ Volts	Test Current I_{ZT} mA	Max Zener Impedance A&B Suffix Only ⁽²⁾		Max Reverse Leakage Current				Max Zener Voltage Temp. Coeff. (A&B Suffix Only) $\alpha_{VZ} (\%/^{\circ}C)^{(3)}$
			$Z_{ZT} @ I_{ZT}$ Ohms	$Z_{ZT} @ I_{ZK}=0.25mA$ Ohms	A, B, & D Suffix Only			Non Suffix $I_R @ V_R$ Used For Suffix A μA	
					I_R μA	@ Volts			
1N5261B	47	2.7	105	1000	0.1	34	36	10	+0.095
1N5262B	51	2.5	125	1100	0.1	37	39	10	+0.096
1N5263B	56	2.2	150	1300	0.1	41	43	10	+0.096
1N5264B	60	2.1	170	1400	0.1	44	46	10	+0.097
1N5265B	62	2.0	185	1400	0.1	45	47	10	+0.097
1N5266B	68	1.8	230	1600	0.1	49	52	10	+0.097
1N5267B	75	1.7	270	1700	0.1	53	56	10	+0.098
1N5268B	82	1.5	330	2000	0.1	59	62	10	+0.098
1N5269B	87	1.4	370	2200	0.1	65	68	10	+0.099
1N5270B	91	1.4	400	2300	0.1	66	69	10	+0.099
1N5271B	100	1.3	500	2600	0.1	72	76	10	+0.110
1N5272B	110	1.1	750	3000	0.1	80	84	10	+0.110
1N5273B	120	1.0	900	4000	0.1	86	91	10	+0.110
1N5274B	130	0.95	1100	4500	0.1	94	99	10	+0.110
1N5275B	140	0.90	1300	4500	0.1	101	106	10	+0.110
1N5276B	150	0.85	150	5000	0.1	108	114	10	+0.110
1N5277B	160	0.80	170	5500	0.1	116	122	10	+0.110
1N5278B	170	0.74	190	5500	0.1	123	129	10	+0.110
1N5279B	180	0.68	2200	6000	0.1	130	137	10	+0.110
1N5280B	190	0.66	2400	6500	0.1	137	144	10	+0.110
1N5281B	200	0.65	2500	7000	0.1	144	152	10	+0.110

NOTE 1: The electrical characteristics are measured after allowing the device to stabilize for 20 seconds when mounted with a 3/8" minimum lead length from the case.

NOTE 2: The zener impedance is derived from the 60HZ ac voltage, which results when an ac current having an r.m.s. value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve, thereby eliminating unstable units.

NOTE 3: Temperature coefficient (α_{VZ}). Test conditions for temperature coefficient are as follows:

a. $I_{ZT} = 7.5 \text{ mA}$, $T_1 = 25^{\circ}C$,
 $T_2 = 125^{\circ}C$ (1N5221A, thru 1N5242A, B.)

b. $I_{ZT} = \text{Rated } I_{ZT}$, $T_1 = 25^{\circ}C$,
 $T_2 = 125^{\circ}C$ (1N5243A, B thru 1N5281A, B.)

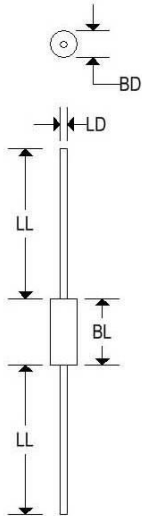
Device to be temperature stabilized with current applied prior to reading breakdown voltage at the specified ambient temperature.

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MECHANICAL CHARACTERISTICS

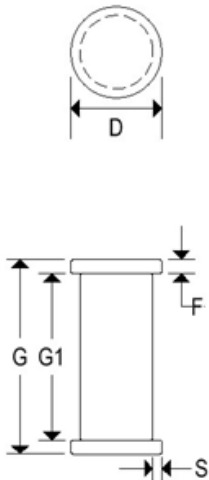
Case:	DO-35
Marking:	Body painted, alpha-numeric
Polarity:	Cathode band



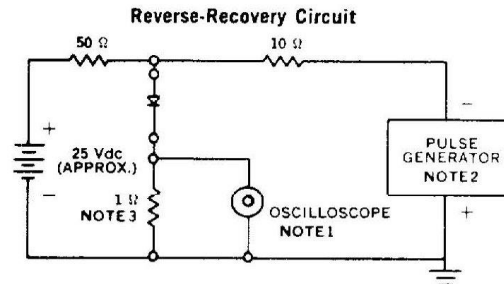
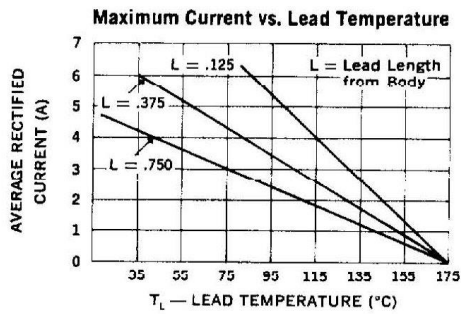
	DO-35			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.055	0.090	1.400	2.290
BL	0.120	0.200	3.050	5.080
LD	0.018	0.022	0.460	0.560
LL	1.000	1.500	25.400	38.100

MECHANICAL CHARACTERISTICS

Case:	SOD-80
Marking:	Alpha-numeric
Polarity:	Cathode band



	SOD-80			
	Inches		Millimeters	
	Min	Max	Min	Max
D	0.055	0.067	1.600	1.700
F	-	0.022	0.410	0.550
G	0.130	0.146	3.300	3.700
G1	0.100	REF	2.540	REF
S	0.001	-	0.030	-



NOTES:

1. Oscilloscope: Rise time $\leq 3\text{ns}$; input impedance = 50 Ω .
2. Pulse Generator: Rise time $\leq 8\text{ns}$; source impedance 10 Ω .
3. Current viewing resistor, non-inductive, coaxial recommended.

