



# 1N5221 THRU 1N5281

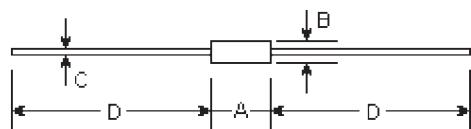
## SILICON PLANAR ZENER DIODES

### Features

#### Silicon Planar Zener Diodes

Standard Zener voltage tolerance is  $\pm 20\%$ . Add suffix "A" for  $\pm 10\%$  tolerance and suffix "B" for  $\pm 5\%$  tolerance. Other tolerances, non standard and higher Zener voltages upon request.

#### DO-35



DIM	DIMENSIONS				Note	
	inches		mm			
	Min.	Max.	Min.	Max.		
A	-	0.154	-	3.9		
B	-	0.075	-	1.9	Φ	
C	-	0.020	-	0.52	Φ	
D	1.083	-	27.50	-		

### Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

	Symbols	Values	Units
Zener current see Table "Characteristics"			
Power dissipation at $T_{amb}=75^\circ\text{C}$	$P_{tot}$	500 <sup>(1)</sup>	mW
Junction temperature	$T_j$	200	$^\circ\text{C}$
Storage temperature range	$T_s$	-65 to +200	$^\circ\text{C}$

#### Note:

(1) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

### Characteristics at $T_{amb}=25^\circ\text{C}$

	Symbols	Min.	Typ.	Max.	Units
Thermal resistance junction to ambient Air	$R_{thA}$	-	-	0.3 <sup>(1)</sup>	K/mW
Forward voltage at $I=200\text{mA}$	$V_F$	-	-	1.1	V

#### Note:

(1) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

Type	Zener voltage range <sup>1)</sup>		Maximum Zener Impedance <sup>1)</sup>			Reverse leakage current		Temp. coefficient of Zener voltage
	$V_{Z_{nom}}^{(3)}$	$I_{ZT}$	$r_{ZT}$ and $r_{ZK}$ at $I_{ZK}$			$I_R^{(2)}$ at $V_R$		
			V	m A	$\Omega$	$\Omega$	m A	uA
1N5221	2.4	20	< 30	< 1200	0.25	< 100	1.0	< -0.085
1N5222	2.5	20	< 30	< 1250	0.25	< 100	1.0	< -0.085
1N5223	2.7	20	< 30	< 1300	0.25	< 75	1.0	< -0.080
1N5224	2.8	20	< 30	< 1400	0.25	< 75	1.0	< -0.080
1N5225	3.0	20	< 29	< 1600	0.25	< 50	1.0	< -0.075
1N5226	3.3	20	< 28	< 1600	0.25	< 25	1.0	< -0.070
1N5227	3.6	20	< 24	< 1700	0.25	< 15	1.0	< -0.065
1N5228	3.9	20	< 23	< 1900	0.25	< 10	1.0	< -0.060
1N5229	4.3	20	< 22	< 2000	0.25	< 5	1.0	< + 0.055
1N5230	4.7	20	< 19	< 1900	0.25	< 5	2.0	< + 0.030
1N5231	5.1	20	< 17	< 1600	0.25	< 5	2.0	< + 0.030
1N5232	5.6	20	< 11	< 1600	0.25	< 5	3.0	< + 0.038
1N5233	6.0	20	< 7	< 1600	0.25	< 5	3.5	< + 0.038
1N5234	6.2	20	< 7	< 1000	0.25	< 5	4.0	< + 0.045
1N5235	6.8	20	< 5	< 750	0.25	< 3	5.0	< + 0.050
1N5236	7.5	20	< 6	< 500	0.25	< 3	6.0	< + 0.058
1N5237	8.2	20	< 8	< 500	0.25	< 3	6.5	< + 0.062
1N5238	8.7	20	< 8	< 600	0.25	< 3	6.5	< + 0.065
1N5239	9.1	20	< 10	< 600	0.25	< 3	7.0	< + 0.068
1N5240	10	20	< 17	< 600	0.25	< 3	8.0	< + 0.075
1N5241	11	20	< 22	< 600	0.25	< 2	8.4	< + 0.076
1N5242	12	20	< 30	< 600	0.25	< 1	9.1	< + 0.077
1N5243	13	9.5	< 13	< 600	0.25	< 0.5	9.9	< + 0.079
1N5244	14	9.0	< 15	< 600	0.25	< 0.1	10	< + 0.082
1N5245	15	8.5	< 16	< 600	0.25	< 0.1	11	< + 0.082
1N5246	16	7.8	< 17	< 600	0.25	< 0.1	12	< + 0.083
1N5247	17	7.4	< 19	< 600	0.25	< 0.1	13	< + 0.084
1N5248	18	7.0	< 21	< 600	0.25	< 0.1	14	< + 0.085
1N5249	19	6.6	< 23	< 600	0.25	< 0.1	14	< + 0.086
1N5250	20	6.2	< 25	< 600	0.25	< 0.1	15	< + 0.086
1N5251	22	5.6	< 29	< 600	0.25	< 0.1	17	< + 0.087
1N5252	24	5.2	< 33	< 600	0.25	< 0.1	18	< + 0.088
1N5253	25	5.0	< 35	< 600	0.25	< 0.1	19	< + 0.089
1N5254	27	4.6	< 41	< 600	0.25	< 0.1	21	< + 0.090
1N5255	28	4.5	< 44	< 600	0.25	< 0.1	21	< + 0.091
1N5256	30	4.2	< 49	< 600	0.25	< 0.1	23	< + 0.091
1N5257	33	3.8	< 58	< 700	0.25	< 0.1	25	< + 0.092
1N5258	36	3.4	< 70	< 700	0.25	< 0.1	27	< + 0.093
1N5259	39	3.2	< 80	< 800	0.25	< 0.1	30	< + 0.094
1N5260	43	3.0	< 93	< 900	0.25	< 0.1	33	< + 0.095
1N5261	47	2.7	< 105	< 1000	0.25	< 0.1	36	< + 0.095
1N5262	51	2.5	< 125	< 1100	0.25	< 0.1	39	< + 0.096
1N5263	56	2.2	< 150	< 1300	0.25	< 0.1	43	< + 0.096
1N5264	60	2.1	< 170	< 1400	0.25	< 0.1	46	< + 0.097
1N5265	62	2.0	< 185	< 1400	0.25	< 0.1	47	< + 0.097
1N5266	68	1.8	< 230	< 1600	0.25	< 0.1	52	< + 0.097
1N5267	75	1.7	< 270	< 1700	0.25	< 0.1	56	< + 0.098
1N5268	82	1.5	< 330	< 2000	0.25	< 0.1	62	< + 0.098
1N5269	87	1.4	< 370	< 2200	0.25	< 0.1	68	< + 0.099
1N5270	91	1.4	< 400	< 2300	0.25	< 0.1	69	< + 0.099
1N5271	100	1.3	< 500	-	-	< 0.1	75	< + 0.100
1N5272	110	1.2	< 700	-	-	< 0.1	83	< + 0.100
1N5273	120	1.0	< 950	-	-	< 0.1	90	< + 0.100
1N5274	130	0.95	< 1100	-	-	< 0.1	98	< + 0.110
1N5275	140	0.90	< 1300	-	-	< 0.1	105	< + 0.110
1N5276	150	0.85	< 1500	-	-	< 0.1	113	< + 0.110
1N5277	160	0.80	< 1700	-	-	< 0.1	120	< + 0.115
1N5278	170	0.74	< 1900	-	-	< 0.1	127	< + 0.115
1N5279	180	0.68	< 2200	-	-	< 0.1	135	< + 0.120
1N5280	190	0.66	< 2400	-	-	< 0.1	142	< + 0.120
1N5281	200	0.65	< 2500	-	-	< 0.1	150	< + 0.120

**Notes:**

(1) The Zener Impedance is derived from the 60Hz AC voltage which results when an AC current having an RMS value equal to 10% of the

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 and to eliminate unstable units.

(2) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

(3) Measured under thermal equilibrium and DC test conditions.

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## RATINGS AND CHARACTERISTIC CURVES

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### Admissible power dissipation versus ambient temperature

Valid provided that leads at a distance of 10 mm  
from case are kept at ambient temperature

