

FAIRCHILD

A Schlumberger Company

1N5226 through 1N5257
500 mW Silicon Zener Diodes

T-11-13

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature Range	-65°C to +200°C
Maximum Junction Operating Temperature	+200°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 75°C Ambient	500 mW
Linear Power Derating Factor (from 75°C)	4.0 mW/°C
Maximum Surge Power (Note 3)	10 W

PACKAGES

All Devices DO-35

ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise noted)

SYMBOL	V _Z		Z _Z	I _{ZT}	Z _{ZK}	I _R		V _{RT}		TC
	Nominal Zener Voltage (Note 4) @I _{ZT}	Maximum Zener Impedance (Note 5) @I _{ZT}	Test Current	Maximum Zener Knee Impedance (Note 5) @I _{ZK} = 0.25 mA	Maximum Reverse Current @ V _{RT}		Test Voltage		Maximum Temperature Coefficient of V _Z (Note 6)	
					±20% V _Z Tolerance	±10, 5, 2, 1% V _Z Tolerance	±20, 10% V _Z Tolerance	±5, 2, 1% V _Z Tolerance		
UNIT	V	Ω	mA	Ω	μA	μA	V	V	%/°C	
1N5226	3.3	28	20	1600	100	25	0.95	1.0	-0.070	
1N5227	3.6	24	20	1700	100	15	0.95	1.0	-0.065	
1N5228	3.9	23	20	1900	75	10	0.95	1.0	-0.060	
1N5229	4.3	22	20	2000	50	5.0	0.95	1.0	±0.055	
1N5230	4.7	19	20	1900	50	5.0	1.9	2.0	±0.030	
1N5231	5.1	17	20	1600	50	5.0	1.9	2.0	±0.030	
1N5232	5.6	11	20	1600	50	5.0	2.9	3.0	+0.038	
1N5233	6.0	7.0	20	1600	50	5.0	3.3	3.5	+0.038	
1N5234	6.2	7.0	20	1000	50	5.0	3.8	4.0	+0.045	
1N5235	6.8	5.0	20	750	30	3.0	4.8	5.0	+0.050	
1N5236	7.5	6.0	20	500	30	3.0	5.7	6.0	+0.058	
1N5237	8.2	8.0	20	500	30	3.0	6.2	6.5	+0.062	
1N5238	8.7	8.0	20	600	30	3.0	6.2	6.5	+0.065	
1N5239	9.1	10	20	600	30	3.0	6.7	7.0	+0.068	
1N5240	10.0	17	20	600	30	3.0	7.6	8.0	+0.075	
1N5241	11.0	22	20	600	30	2.0	8.0	8.4	+0.076	

NOTES:

- These ratings are limiting values above which the serviceability of the diode may be impaired.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
- Non-recurrent square wave, PW = 8.3 ms, T_R = 55°C.
- Type numbers without suffix have ±20% tolerance on nominal V_Z.
Type numbers with suffix A have ±10% tolerance on nominal V_Z.
Type numbers with suffix B have ±5% tolerance on nominal V_Z.
Type numbers with suffix C have ±2% tolerance on nominal V_Z.
Type numbers with suffix D have ±1% tolerance on nominal V_Z.
- The Zener impedances Z_Z and Z_{ZK} are derived by superimposing a 60 Hz signal on test currents I_{ZT} and I_{ZK}, having an RMS value of 10% of the d.c. value of I_{ZT} and I_{ZK} respectively.
- Maximum temperature coefficients apply to 10, 5, 2 and 1% tolerance types only and are measured under the following conditions:
1N5226A, B, C, D through 1N5242A, B, C, D: I_Z = 7.5 mA, T₁ = 25°C, T₂ = 125°C.
1N5242A, B, C, D through 1N5257A, B, C, D: I_Z = I_{ZT}, T₁ = 25°C, T₂ = 125°C.
- V_F = 1.1V (maximum) @ I_F = 200 mA for all types.
- For product family characteristic curves, refer to Chapter 4, D13.

1N5226 through 1N5257

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ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise noted)

SYMBOL	V _Z		Z _Z	I _{ZT}	Z _{ZK}	I _R		V _{RT}		TC
	Nominal Zener Voltage (Note 4) @I _{ZT}	Maximum Zener Impedance (Note 5) @I _{ZT}	Test Current	Maximum Zener Knee Impedance (Note 5) @I _{ZK} = 0.25 mA	Maximum Reverse Current @ V _{RT}		Test Voltage		Maximum Temperature Coefficient of V _Z (Note 6)	
					±20% V _Z Tolerance	±10, 5, 2, 1% V _Z Tolerance	±20, 10% V _Z Tolerance	±5, 2, 1% V _Z Tolerance		
UNIT	V	Ω	mA	Ω	μA	μA	V	V	%/°C	
1N5242	12.0	30	20	600	10	1.0	8.7	9.1	+0.077	
1N5243	13.0	13	9.5	600	10	0.5	9.4	9.9	+0.079	
1N5244	14.0	15	9.0	600	10	0.1	9.5	10.0	+0.082	
1N5245	15.0	16	8.5	600	10	0.1	10.5	11.0	+0.082	
1N5246	16.0	17	7.8	600	10	0.1	11.4	12.0	+0.083	
1N5247	17.0	19	7.4	600	10	0.1	12.4	13.0	+0.084	
1N5248	18.0	21	7.0	600	10	0.1	13.3	14.0	+0.085	
1N5249	19.0	23	6.6	600	10	0.1	13.3	14.0	+0.086	
1N5250	20.0	25	6.2	600	10	0.1	14.3	15.0	+0.086	
1N5251	22.0	29	5.6	600	10	0.1	16.2	17.0	+0.087	
1N5252	24.0	33	5.2	600	10	0.1	17.1	18.0	+0.088	
1N5253	25.0	35	5.0	600	10	0.1	18.1	19.0	+0.089	
1N5254	27.0	41	4.6	600	10	0.1	20.0	21.0	+0.090	
1N5255	28.0	44	4.5	600	10	0.1	20.0	21.0	+0.091	
1N5256	30.0	49	4.2	600	10	0.1	22.0	23.0	+0.091	
1N5257	33.0	58	3.8	700	10	0.1	24.0	25.0	+0.092	