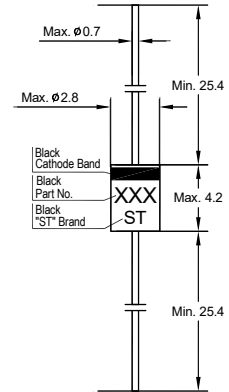


1N4727A...1N4761A

Silicon Planar Power Zener Diodes

For use in stabilizing and clipping circuits with high power rating.



Glass Case DO-41
Dimensions in mm

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

Parameter	Symbol	Value	Unit
Power Dissipation	P_{tot}	1	W
Junction Temperature	T_j	200	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 200	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient ¹⁾	$R_{\theta JA}$	175	$^\circ\text{C/W}$

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



Characteristics at $T_a = 25\text{ }^\circ\text{C}$ (V_F max : 1.2 V at $I_F = 200\text{ mA}$)

Type	Zener Voltage Range ³⁾			Dynamic Resistance ¹⁾			Reverse Current		Maximum Surge Current ⁴⁾	Maximum Regulator Current ²⁾	Temperature coefficient at I_{ZT}
	V_{Znom}	V_{ZT}	at I_{ZT}	Z_{ZT}	Z_{ZK}	at I_{ZK}	I_R	at V_R			
	(V)	(V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (μA)	(V)	I_{ZSM} (mA)	I_{ZM} (mA)	%/ $^\circ\text{C}$
1N4727A	3	2.85...3.15	83	10	400	1	150	1	1375	275	-0.08 to -0.05
1N4728A	3.3	3.13...3.47	76	10	400	1	150	1	1375	275	-0.08 to -0.05
1N4729A	3.6	3.42...3.78	69	10	400	1	100	1	1260	252	-0.08 to -0.05
1N4730A	3.9	3.7...4.1	64	9	400	1	100	1	1190	234	-0.07 to -0.02
1N4731A	4.3	4.08...4.52	58	9	400	1	50	1	1070	217	-0.07 to -0.01
1N4732A	4.7	4.46...4.94	53	8	500	1	10	1	970	193	-0.03 to +0.04
1N4733A	5.1	4.84...5.36	49	7	550	1	10	1	890	178	-0.01 to +0.04
1N4734A	5.6	5.32...5.88	45	5	600	1	10	2	810	162	0.10 to +0.045
1N4735A	6.2	5.89...6.51	41	2	700	1	10	3	730	146	+0.01 to +0.055
1N4736A	6.8	6.46...7.14	37	3.5	700	1	10	4	660	133	+0.015 to +0.06
1N4737A	7.5	7.12...7.88	34	4	700	0.5	10	5	605	121	+0.02 to +0.065
1N4738A	8.2	7.79...8.61	31	4.5	700	0.5	10	6	550	110	0.03 to 0.07
1N4739A	9.1	8.64...9.56	28	5	700	0.5	10	7	500	100	0.035 to 0.075
1N4740A	10	9.5...10.5	25	7	700	0.25	10	7.6	454	91	0.04 to 0.08
1N4741A	11	10.45...11.55	23	8	700	0.25	5	8.4	414	83	0.045 to 0.08
1N4742A	12	11.4...12.6	21	9	700	0.25	5	9.1	380	76	0.045 to 0.085
1N4743A	13	12.35...13.65	19	10	700	0.25	5	9.9	344	69	0.05 to 0.085
1N4744A	15	14.25...15.75	17	14	700	0.25	5	11.4	304	61	0.055 to 0.09
1N4745A	16	15.2...16.8	15.5	16	700	0.25	5	12.2	285	57	0.055 to 0.09
1N4746A	18	17.1...18.9	14	20	750	0.25	5	13.7	250	50	0.06 to 0.09
1N4747A	20	19...21	12.5	22	750	0.25	5	15.2	225	45	0.06 to 0.09
1N4748A	22	20.9...23.1	11.5	23	750	0.25	5	16.7	205	41	0.06 to 0.095
1N4749A	24	22.8...25.2	10.5	25	750	0.25	5	18.2	190	38	0.06 to 0.095
1N4750A	27	25.65...28.35	9.5	35	750	0.25	5	20.6	170	34	0.06 to 0.095
1N4751A	30	28.5...31.5	8.5	40	1000	0.25	5	22.8	150	30	0.06 to 0.095
1N4752A	33	31.35...34.65	7.5	45	1000	0.25	5	25.1	135	27	0.06 to 0.095
1N4753A	36	34.2...37.8	7	50	1000	0.25	5	27.4	125	25	0.06 to 0.095
1N4754A	39	37.05...40.95	6.5	60	1000	0.25	5	29.7	115	23	0.06 to 0.095
1N4755A	43	40.85...45.15	6	70	1500	0.25	5	32.7	110	22	0.06 to 0.095
1N4756A	47	44.65...49.35	5.5	80	1500	0.25	5	35.8	95	19	0.06 to 0.095
1N4757A	51	48.45...53.55	5	95	1500	0.25	5	38.8	90	18	0.06 to 0.095
1N4758A	56	53.2...58.8	4.5	110	2000	0.25	5	42.6	80	16	0.06 to 0.095
1N4759A	62	58.9...65.1	4	125	2000	0.25	5	47.1	70	14	0.06 to 0.095
1N4760A	68	64.6...71.4	3.7	150	2000	0.25	5	51.7	65	13	0.06 to 0.095
1N4761A	75	71.25...78.75	3.3	175	2000	0.25	5	56	60	12	0.06 to 0.095

¹⁾ The dynamic resistance is derived from the 60 Hz 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} . Dynamic resistance 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⁾ Tested with pulses $t_p = 20\text{ ms}$.

⁴⁾ The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current I_{ZT} .



Electrical Characteristics Curves

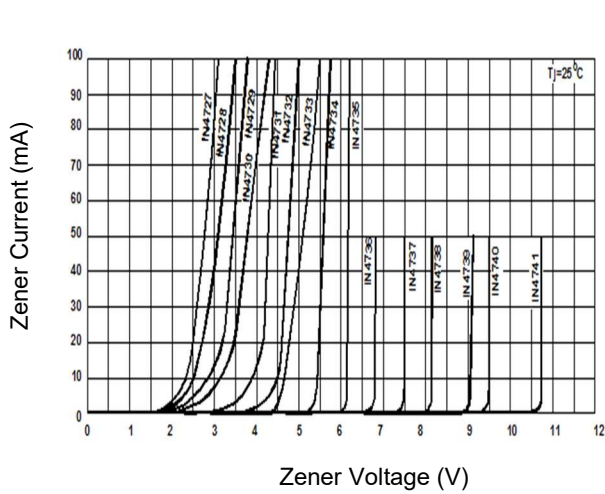


Fig 1. Zener Characteristics Curve

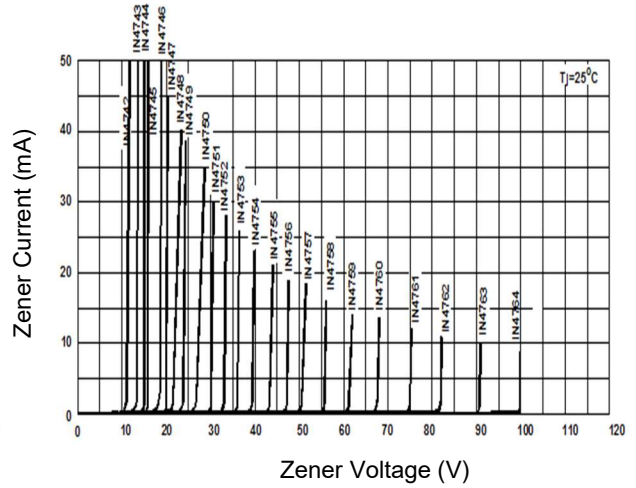


Fig 2. Zener Characteristics Curve

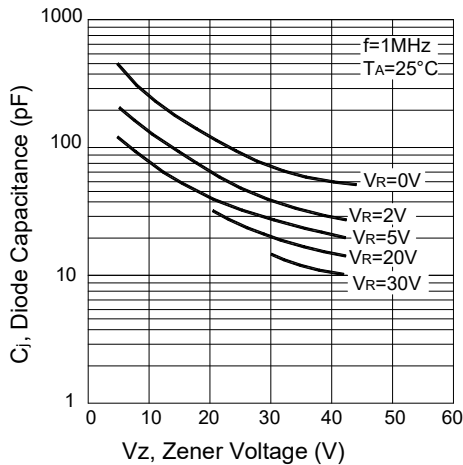


Fig 3. Junction Capacitance vs Zener Voltage

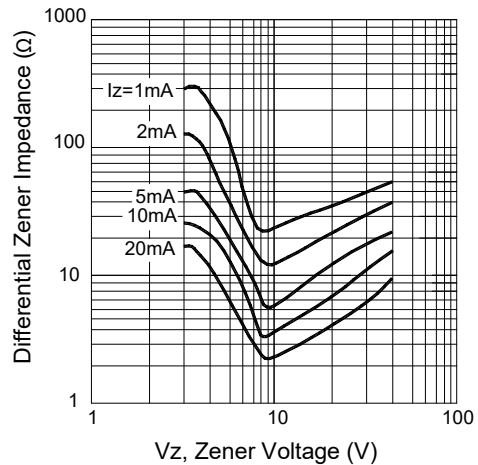


Fig 4. Typical Zener Impedance vs. Zener Voltage

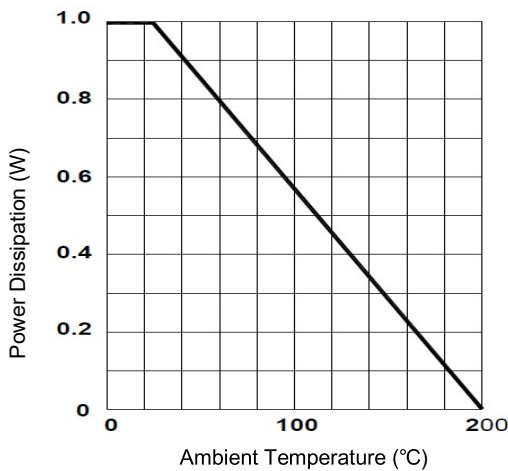


Fig 5. Power Derating Curve