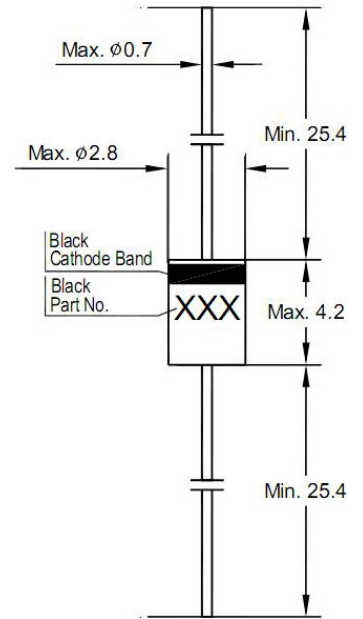


# 1N4727A...1N4761A

## Silicon Planar Power Zener Diodes

### FEATURES

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



Glass Case DO-41  
Dimensions in mm

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

PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	$P_{tot}$	1 <sup>1)</sup>	W
Junction Temperature	$T_j$	200	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to + 200	$^\circ\text{C}$
1) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.			

Characteristics at  $T_a=25^\circ\text{C}$

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance Junction to Ambient Air	$R_{thA}$	170 <sup>1)</sup>	K/W
Forward Voltage at $I_F = 200\text{ mA}$	$V_F$	1.2	V
1) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.			

# 1N4727A...1N4761A

## Characteristics at Ta=25°C

TYPE	Zener Voltage Range <sup>3)</sup>			Dynamic Resistance <sup>1)</sup>			Reverse Current		Maximum Surge Current <sup>4)</sup>	Maximum Regulator Current <sup>2)</sup>
	V <sub>Znom</sub>	V <sub>ZT</sub>	at I <sub>ZT</sub>	Z <sub>ZT</sub>	Z <sub>Zk</sub>	at I <sub>Zk</sub>	I <sub>R</sub>	at V <sub>R</sub>	at T <sub>a</sub> = 25°C	
	(V)	(V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max.(μA)	(V)	I <sub>ZSM</sub> (mA)	I <sub>ZM</sub> (mA)
1N4727A	3	2.85...3.15	83	10	400	1	150	1	1375	275
1N4728A	3.3	3.13...3.47	76	10	400	1	150	1	1375	275
1N4729A	3.6	3.42...3.78	69	10	400	1	100	1	1260	252
1N4730A	3.9	3.7...4.1	64	9	400	1	100	1	1190	234
1N4731A	4.3	4.08...4.52	58	9	400	1	50	1	1070	217
1N4732A	4.7	4.46...4.94	53	8	500	1	10	1	970	193
1N4733A	5.1	4.84...5.36	49	7	550	1	10	1	890	178
1N4734A	5.6	5.32...5.88	45	5	600	1	10	2	810	162
1N4735A	6.2	5.89...6.51	41	2	700	1	10	3	730	146
1N4736A	6.8	6.46...7.14	37	3.5	700	1	10	4	660	133
1N4737A	7.5	7.12...7.88	34	4	700	0.5	10	5	605	121
1N4738A	8.2	7.79...8.61	31	4.5	700	0.5	10	6	550	110
1N4739A	9.1	8.64...9.56	28	5	700	0.5	10	7	500	100
1N4740A	10	9.5...10.5	25	7	700	0.25	10	7.6	454	91
1N4741A	11	10.45...11.55	23	8	700	0.25	5	8.4	414	83
1N4742A	12	11.4...12.6	21	9	700	0.25	5	9.1	380	76
1N4743A	13	12.35...13.65	19	10	700	0.25	5	9.9	344	69
1N4744A	15	14.25...15.75	17	14	700	0.25	5	11.4	304	61
1N4745A	16	15.2...16.8	15.5	16	700	0.25	5	12.2	285	57
1N4746A	18	17.1...18.9	14	20	750	0.25	5	13.7	250	50
1N4747A	20	19...21	12.5	22	750	0.25	5	15.2	225	45
1N4748A	22	20.9...23.1	11.5	23	750	0.25	5	16.7	205	41
1N4749A	24	22.8...25.2	10.5	25	750	0.25	5	18.2	190	38
1N4750A	27	25.65...28.35	9.5	35	750	0.25	5	20.6	170	34
1N4751A	30	28.5...31.5	8.5	40	1000	0.25	5	22.8	150	30
1N4752A	33	31.35...34.65	7.5	45	1000	0.25	5	25.1	135	27
1N4753A	36	34.2...37.8	7	50	1000	0.25	5	27.4	125	25
1N4754A	39	37.05...40.95	6.5	60	1000	0.25	5	29.7	115	23
1N4755A	43	40.85...45.15	6	70	1500	0.25	5	32.7	110	22
1N4756A	47	44.65...49.35	5.5	80	1500	0.25	5	35.8	95	19
1N4757A	51	48.45...53.55	5	95	1500	0.25	5	38.8	90	18
1N4758A	56	53.2...58.8	4.5	110	2000	0.25	5	42.6	80	16

## 1N4727A...1N4761A

### Characteristics at Ta=25°C

TYPE	Zener Voltage Range <sup>3)</sup>			Dynamic Resistance <sup>1)</sup>			Reverse Current		Maximum Surge Current <sup>4)</sup>	Maximum Regulator Current <sup>2)</sup>
	V <sub>znom</sub>	V <sub>ZT</sub>	at I <sub>ZT</sub>	Z <sub>ZT</sub>	Z <sub>ZK</sub>	at I <sub>ZK</sub>	I <sub>R</sub>	at V <sub>R</sub>	at T <sub>a</sub> = 25°C	
	(V)	(V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max.(μA)	(V)	I <sub>ZSM</sub> (mA)	I <sub>ZM</sub> (mA)
1N4759A	62	58.9...65.1	4	125	2000	0.25	5	47.1	70	14
1N4760A	68	64.6...71.4	3.7	150	2000	0.25	5	51.7	65	13
1N4761A	75	71.25...78.75	3.3	175	2000	0.25	5	56	60	12

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<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>. 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.

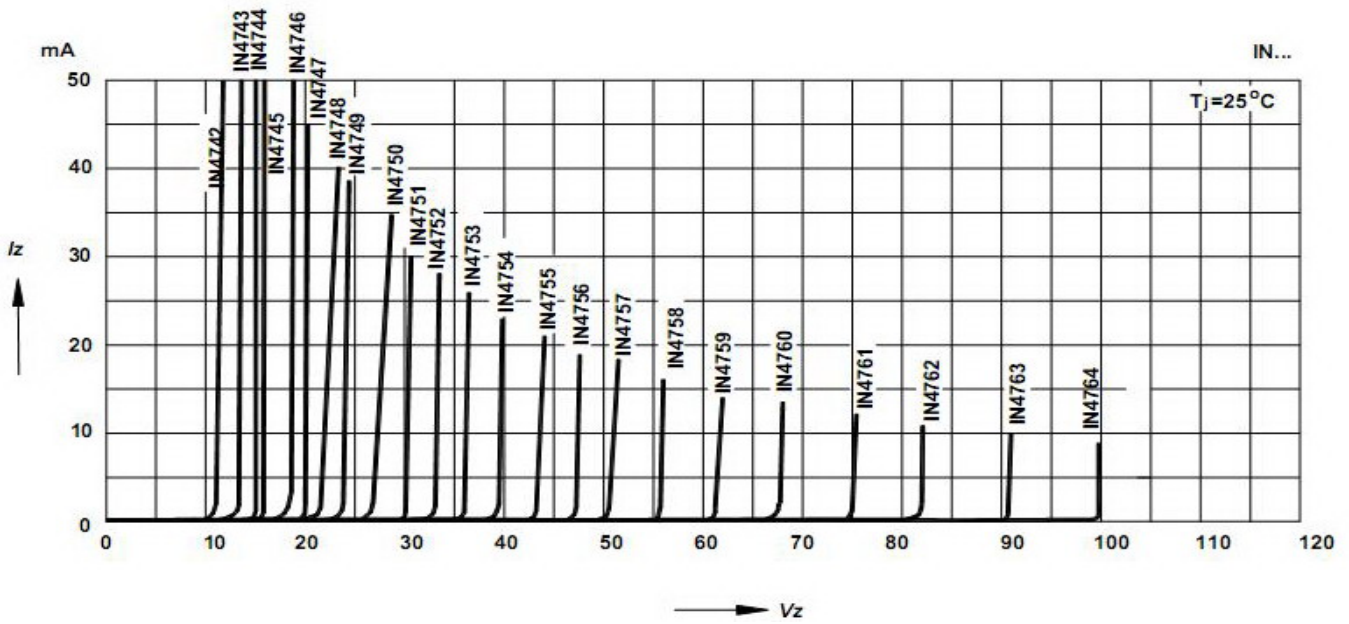
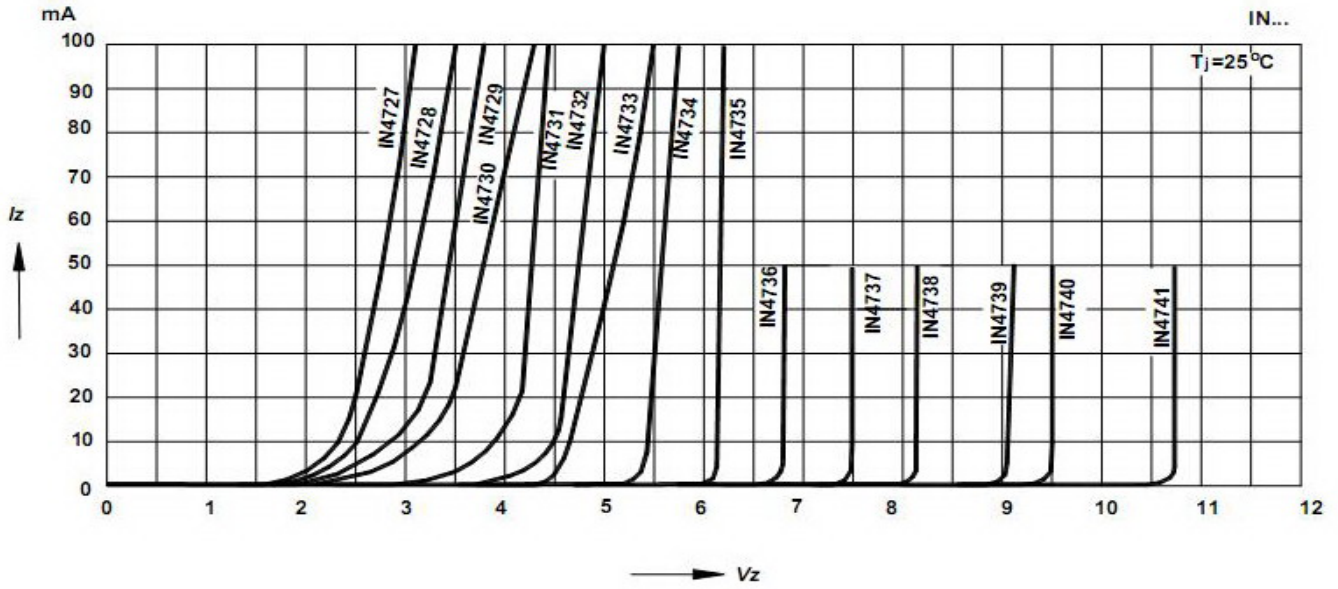
3) Tested with pulses t<sub>p</sub> = 20 ms.

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<sub>ZT</sub>.

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## Breakdown characteristics

$T_j = \text{constant (pulsed)}$



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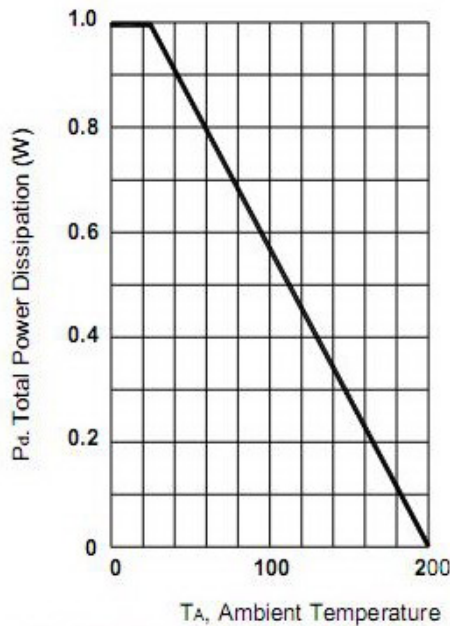


Fig. 1 Power Dissipation vs Ambient Temperature

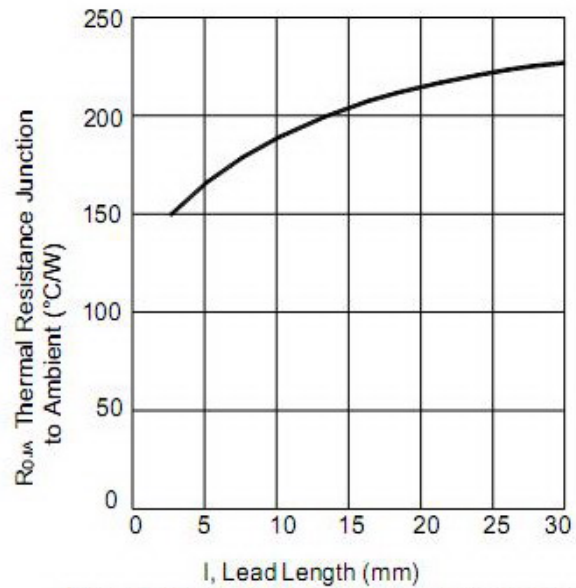


Fig. 2 Typical Thermal Resistance vs. Lead Length

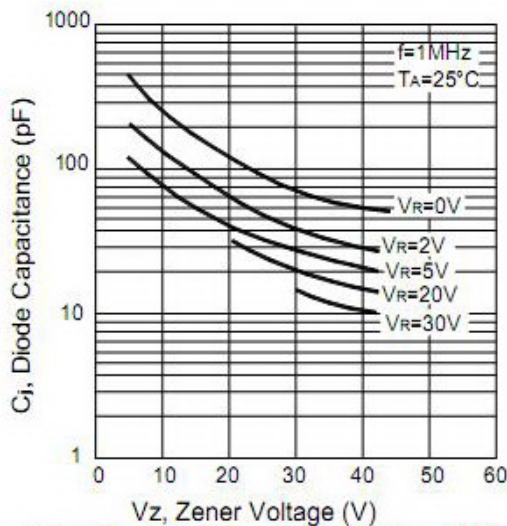


Fig. 3 Junction Capacitance vs Zener Voltage

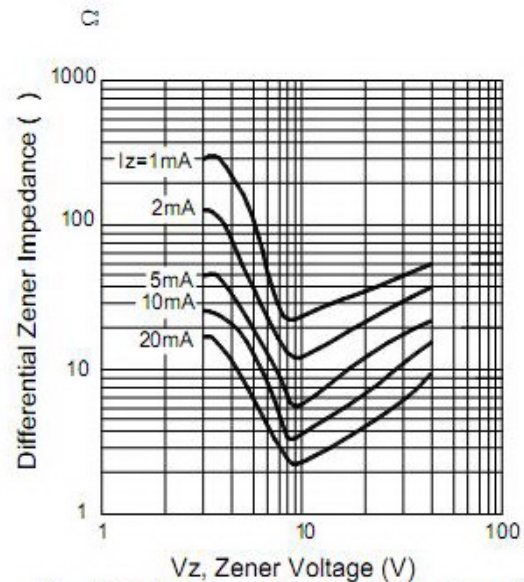


Fig. 4 Typical Zener Impedance vs. Zener Voltage