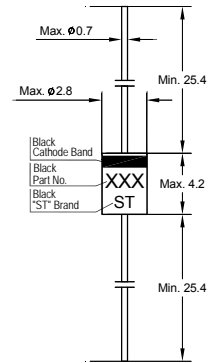


# 1N4727...1N4761

## Silicon Planar Power Zener Diodes

for use in stabilizing and clipping circuits with high power rating. Standard zener voltage tolerance is  $\pm 10\%$ . Add suffix "A" for  $\pm 5\%$  tolerance and suffix "B" for  $\pm 2\%$  tolerance. Other tolerances are available upon request.



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 <sup>1)</sup>	W
Junction Temperature	$T_j$	200	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 65 to + 200	$^\circ\text{C}$

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

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

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

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

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## Characteristics at T<sub>a</sub> = 25 °C

Type	Zener Voltage <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>	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)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (μA)	(V)	I <sub>ZSM</sub> (mA)	I <sub>ZM</sub> (mA)
1N4727	3	83	10	400	1	150	1	1375	275
1N4728	3.3	76	10	400	1	150	1	1375	275
1N4729	3.6	69	10	400	1	100	1	1260	252
1N4730	3.9	64	9	400	1	100	1	1190	234
1N4731	4.3	58	9	400	1	50	1	1070	217
1N4732	4.7	53	8	500	1	10	1	970	193
1N4733	5.1	49	7	550	1	10	1	890	178
1N4734	5.6	45	5	600	1	10	2	810	162
1N4735	6.2	41	2	700	1	10	3	730	146
1N4736	6.8	37	3.5	700	1	10	4	660	133
1N4737	7.5	34	4	700	0.5	10	5	605	121
1N4738	8.2	31	4.5	700	0.5	10	6	550	110
1N4739	9.1	28	5	700	0.5	10	7	500	100
1N4740	10	25	7	700	0.25	10	7.6	454	91
1N4741	11	23	8	700	0.25	5	8.4	414	83
1N4742	12	21	9	700	0.25	5	9.1	380	76
1N4743	13	19	10	700	0.25	5	9.9	344	69
1N4744	15	17	14	700	0.25	5	11.4	304	61
1N4745	16	15.5	16	700	0.25	5	12.2	285	57
1N4746	18	14	20	750	0.25	5	13.7	250	50
1N4747	20	12.5	22	750	0.25	5	15.2	225	45
1N4748	22	11.5	23	750	0.25	5	16.7	205	41
1N4749	24	10.5	25	750	0.25	5	18.2	190	38
1N4750	27	9.5	35	750	0.25	5	20.6	170	34
1N4751	30	8.5	40	1000	0.25	5	22.8	150	30
1N4752	33	7.5	45	1000	0.25	5	25.1	135	27
1N4753	36	7	50	1000	0.25	5	27.4	125	25
1N4754	39	6.5	60	1000	0.25	5	29.7	115	23
1N4755	43	6	70	1500	0.25	5	32.7	110	22
1N4756	47	5.5	80	1500	0.25	5	35.8	95	19
1N4757	51	5	95	1500	0.25	5	38.8	90	18
1N4758	56	4.5	110	2000	0.25	5	42.6	80	16
1N4759	62	4	125	2000	0.25	5	47.1	70	14
1N4760	68	3.7	150	2000	0.25	5	51.7	65	13
1N4761	75	3.3	175	2000	0.25	5	56	60	12

<sup>1)</sup> 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.

<sup>2)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

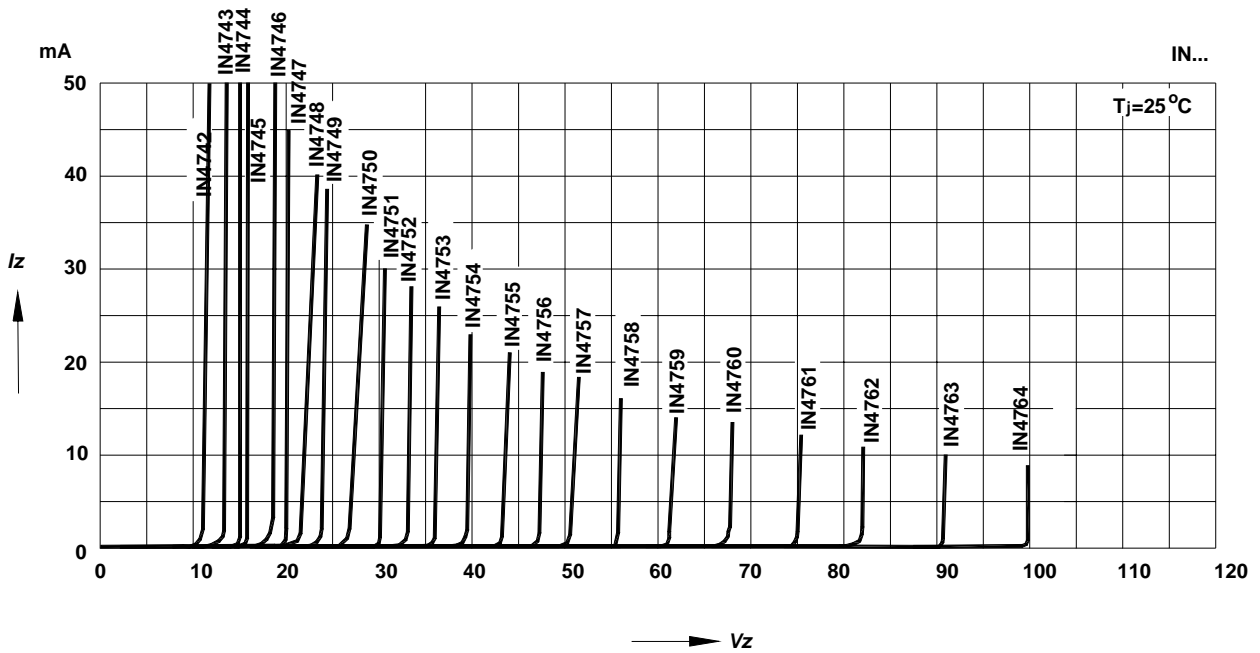
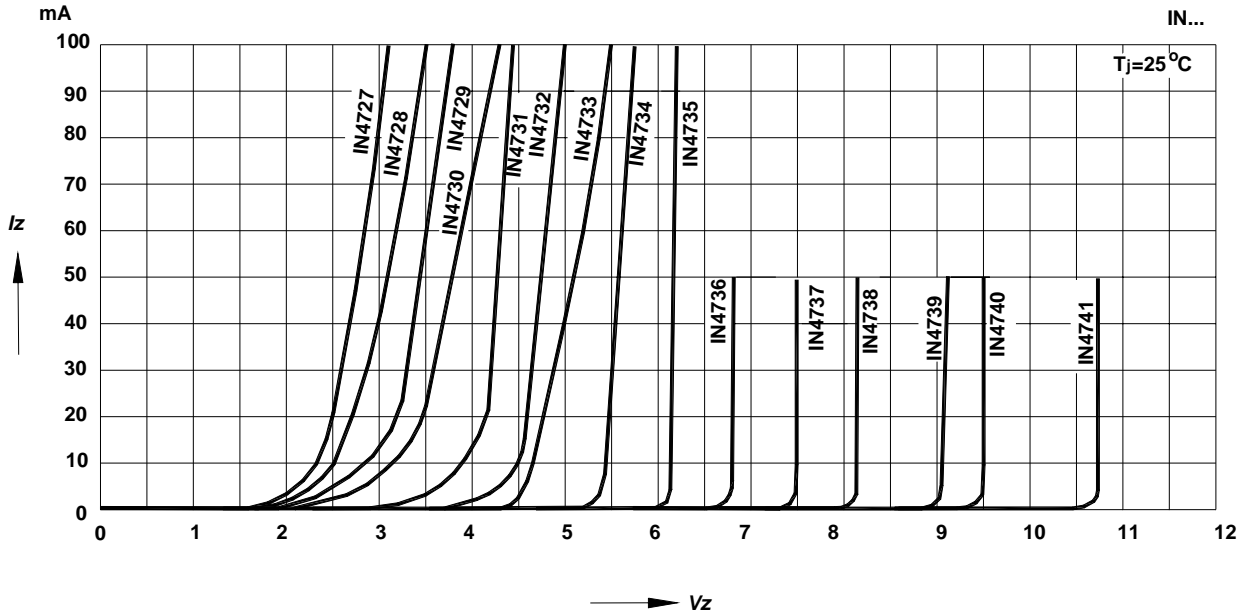
<sup>3)</sup> Tested with pulses t<sub>p</sub> = 20 ms.

<sup>4)</sup> 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

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



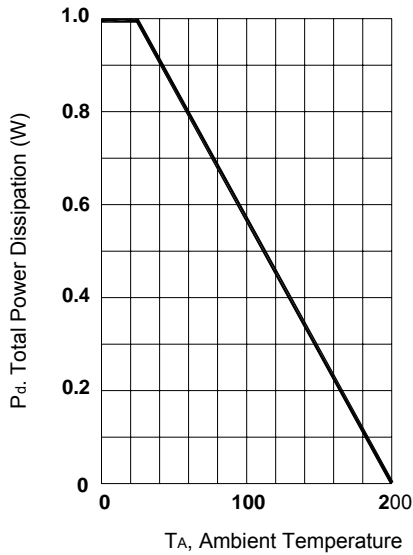


Fig. 1 Power Dissipation vs Ambient Temperature

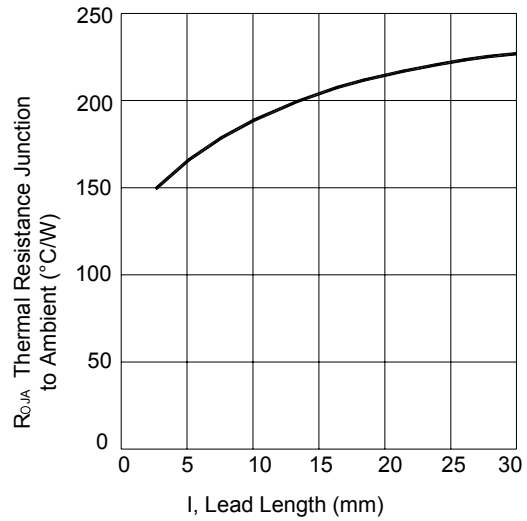


Fig. 2 Typical Thermal Resistance vs. Lead Length

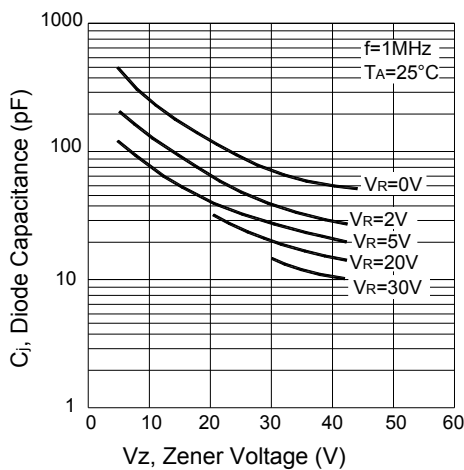


Fig. 3 Junction Capacitance vs Zener Voltage

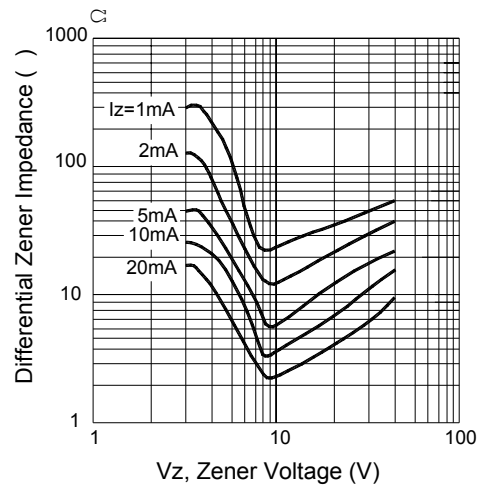


Fig. 4 Typical Zener Impedance vs. Zener Voltage