

ZENER DIODES

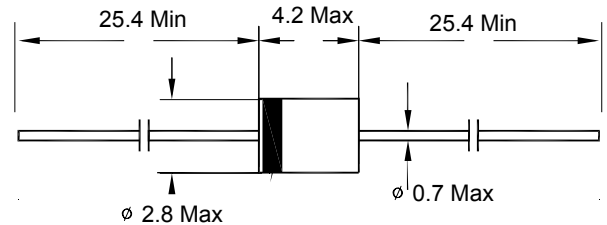
1N4728-1N4764

FEATURES

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.

MECHANICAL DATA

Case: DO-41, glass case  
 Terminals : solderable per MIL-STD-202, method 208  
 Polarity: cathode band  
 Marking: type number  
 Approx. weight: 0.35 grams



DO-41 Dimensions in millimeters

ABSOLUTE MAXIMUM RATINGS (TA=25 °C unless otherwise noted)

Parameter	Symbol	Value	Unit
Power dissipation @ $T_{amb} \leq 50$	$P_{Diss}$	1.0 <sup>1)</sup>	W
Z-current	$I_Z$	$P_V/V_Z$	mA
Junction temperature	$T_J$	200	°C
Storage temperature range	$T_s$	-55---+200	°C
Junction ambient $l=9.5mm(3/8)$ , $T_L=constant$	$R_{ThJA}$	100	K/W

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

ELECTRICAL CHARACTERISTICS (Tamb=25 °C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit
Forward voltage at $I_f=200mA$	$V_F$	—	—	1.2	V

**1N4728-1N4764**

Type	Nominal zener voltage	Test current	Maximum dynamic impedance			Maximum reverse leakage current		Max surge current 8.3ms	Maximum regulator current
	V <sub>Z</sub> @I <sub>ZT</sub>	I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub>	@V <sub>R</sub>	I <sub>R</sub> @T <sub>amb</sub> =25°C	I <sub>ZM</sub> @T <sub>amb</sub> =50°C
	(V)	(mA)	( $\Omega$ )	( $\Omega$ )	(mA)	( $\mu$ A)	(V)	(mA)	(mA)
1N4728	3.3	76	10	400	1.0	100	1	1380	276
1N4729	3.6	69	10	400	1.0	100	1	1260	252
1N4730	3.9	64	9	400	1.0	50	1	1190	234
1N4731	4.3	58	9	400	1.0	10	1	1070	217
1N4732	4.7	53	8	500	1.0	10	1	970	193
1N4733	5.1	49	7	550	1.0	10	1	890	178
1N4734	5.6	45	5	600	1.0	10	2	810	462
1N4735	6.2	41	2	700	1.0	10	3	730	146
1N4736	6.8	37	3.5	700	1.0	10	4	660	133
1N4737	7.5	34	4.0	700	0.5	10	5	605	121
1N4738	8.2	31	4.5	700	0.5	10	6	550	110
1N4739	9.1	28	5.0	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	7.0	50	1000	0.25	5	27.4	125	25
1N4754	39	6.5	60	1000	0.25	5	29.7	115	23
1N4755	43	6.0	70	1500	0.25	5	32.7	110	22
1N4756	47	5.5	80	1500	0.25	5	35.8	95	19
1N4757	51	5.0	95	1500	0.25	5	38.8	90	18
1N4758	56	4.5	110	2000	0.25	5	42.6	80	16
1N4759	62	4.0	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	56.0	60	12
1N4762	82	3.0	200	3000	0.25	5	62.2	55	11
1N4763	91	2.8	250	3000	0.25	5	69.2	50	10
1N4764	100	2.5	350	3000	0.25	5	79.0	45	9

The Zener Impedance 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>. Zener Impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

1N4728-1N4764 Typical Characteristics

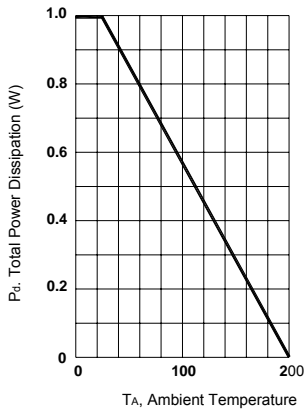
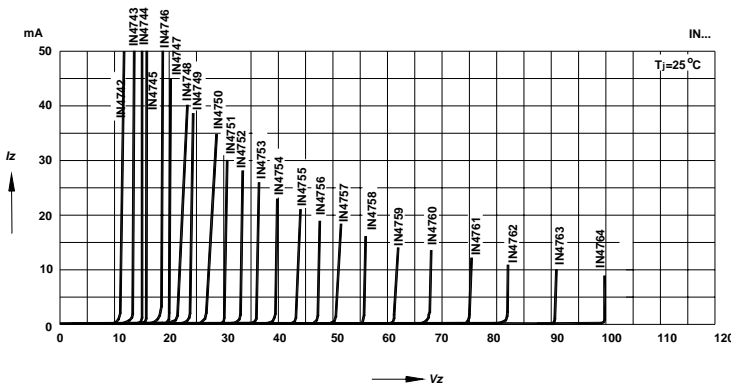
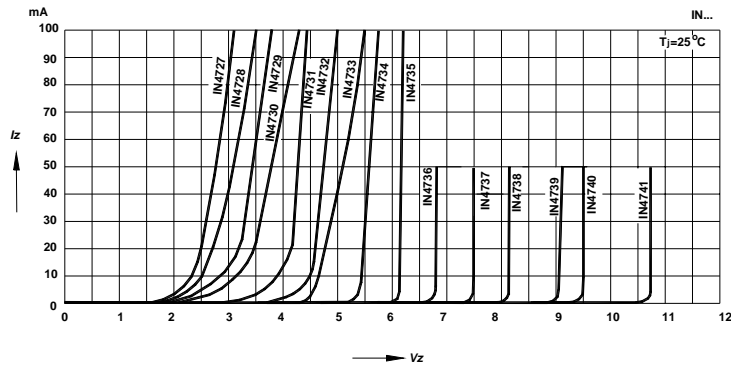


Fig. 1 Power Dissipation vs Ambient Temperature

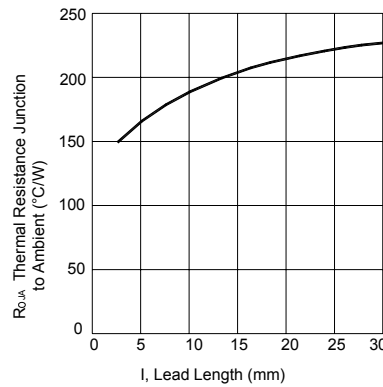


Fig. 2 Typical Thermal Resistance vs. Lead Length

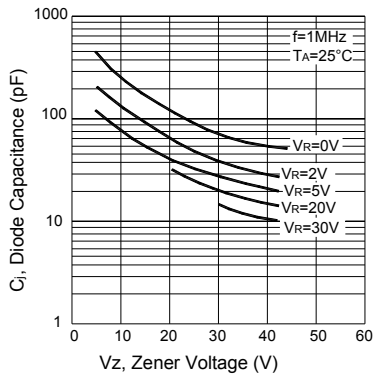


Fig. 3 Junction Capacitance vs Zener Voltage

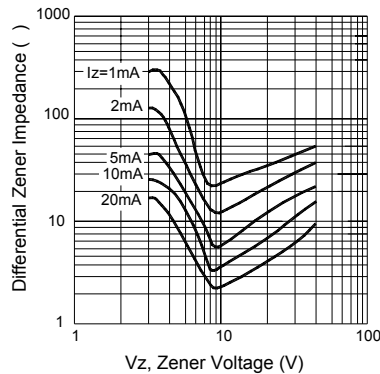


Fig. 4 Typical Zener Impedance vs. Zener Voltage