



# 1N4728A THRU 1N4764A

## 1W ZENER DIODE

### FEATURES

- \* 3.3 thru 100 volt voltage range
- \* High surge current rating
- \* Higher voltages available, see 1EZ series

### MECHANICAL CHARACTERISTICS

- \* CASE: Molded encapsulation, axial lead package (DO-41).
- \* FINISH: Corrosion resistant. Leads are solderable.
- \* THERMAL RESISTANCE: 45°C/Watt junction to lead at 0.375 inches from body.
- \* POLARITY: banded end is cathode.
- \* WEIGHT: 0.4 grams (Typical).

### MAXIMUM RATINGS

Junction and Storage temperature: -65°C to +200°C

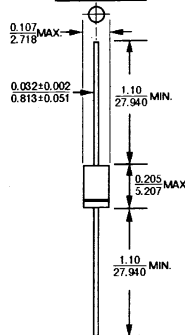
DC Power Dissipation: 1 Watt

Power Derating: 10mW/°C, from 100°C

Forward Voltage @ 200mA: 1.2 Volts

**VOLTAGE RANGE**  
3.3 to 100 Volts

### DO-41



All dimensions in  $\frac{\text{inches}}{\text{mm}}$

### \* ELECTRICAL CHARACTERISTICS @ 25°C

JEDEC TYPE NUMBER (Note 1)	ZENER VOLTAGE (V <sub>Z</sub> ) (Note 4)	TEST CURRENT I <sub>ZT</sub>	MAXIMUM DYNAMIC IMPEDANCE Z <sub>0T</sub> @ I <sub>ZT</sub> (Note 2)	MAXIMUM REVERSE CURRENT I <sub>R</sub> @ V <sub>R</sub>	TEST VOLTAGE (V <sub>R</sub> )	MAXIMUM REGULATOR CURRENT (I <sub>ZM</sub> ) TA = 50°C	MAXIMUM KNEE IMPEDANCE (Z <sub>0K</sub> @ I <sub>ZK</sub> ) (Note 2)	TEST CURRENT (I <sub>ZK</sub> )	MAXIMUM (SURGE) CURRENT (I <sub>S</sub> ) (Note 3)
	VOLTS	mA	OHMS	μA	VOLTS	mA	OHMS	mA	mA
1N4728A	3.3	76	10	100	1	276	400	1.0	1380
1N4729A	3.6	69	10	100	1	252	400	1.0	1260
1N4730A	3.9	64	9	50	1	234	400	1.0	1190
1N4731A	4.3	58	9	10	1	217	400	1.0	1070
1N4732A	4.7	53	8	10	1	193	500	1.0	970
1N4733A	5.1	49	7	10	1	178	550	1.0	890
1N4734A	5.6	45	5	10	2	162	600	1.0	810
1N4735A	6.2	41	2	10	3	146	700	1.0	730
1N4736A	6.8	37	3.5	10	4	133	700	1.0	660
1N4737A	7.5	34	4.0	10	5	121	700	0.5	605
1N4738A	8.2	31	4.5	10	6	110	700	0.5	560
1N4739A	9.1	28	5.0	10	7	100	700	0.5	500
1N4740A	10	25	7	10	7.6	91	700	0.25	454
1N4741A	11	23	8	5	8.4	83	700	0.25	414
1N4742A	12	21	9	5	9.1	76	700	0.25	380
1N4743A	13	19	10	5	9.9	69	700	0.25	344
1N4744A	15	17	14	5	11.4	61	700	0.25	304
1N4745A	16	15.5	16	5	12.2	57	700	0.25	285
1N4746A	18	14	20	5	13.7	50	750	0.25	250
1N4747A	20	12.5	22	5	15.2	45	750	0.25	225
1N4748A	22	11.5	23	5	16.7	41	750	0.25	205
1N4749A	24	10.5	25	5	18.2	38	750	0.25	190
1N4750A	27	9.5	35	5	20.6	34	750	0.25	170
1N4751A	30	8.5	40	5	22.8	30	1000	0.25	150
1N4752A	33	7.5	45	5	25.1	27	1000	0.25	135
1N4753A	36	7.0	50	5	27.4	25	1000	0.25	125
1N4754A	39	6.5	60	5	29.7	23	1000	0.25	115
1N4755A	43	6.0	70	5	32.7	22	1500	0.25	110
1N4756A	47	5.5	80	5	35.8	19	1500	0.25	95
1N4757A	51	5.0	95	5	38.8	18	1500	0.25	90
1N4758A	56	4.5	110	5	42.6	16	2000	0.25	80
1N4759A	62	4.0	125	5	47.1	14	2000	0.25	70
1N4760A	68	3.7	150	5	51.7	13	2000	0.25	65
1N4761A	75	3.3	175	5	56.0	12	2000	0.25	60
1N4762A	82	3.0	200	5	62.2	11	3000	0.25	55
1N4763A	91	2.8	250	5	69.2	10	3000	0.25	50
1N4764A	100	2.5	350	5	76.0	9	3000	0.25	45

\* JEDEC Registered Data

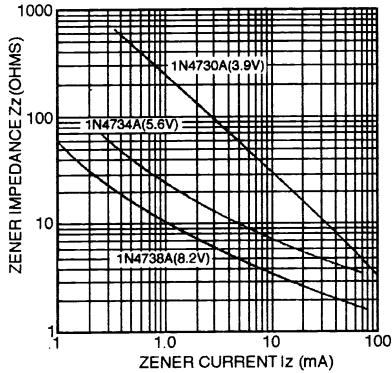
**NOTE 1** The JEDEC type numbers shown have a 5% tolerance on nominal zener voltage. No suffix signifies a 10% tolerance, C signifies 2%, and D signifies 1% tolerance.

**NOTE 2** 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 DC 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 eliminate unstable units.

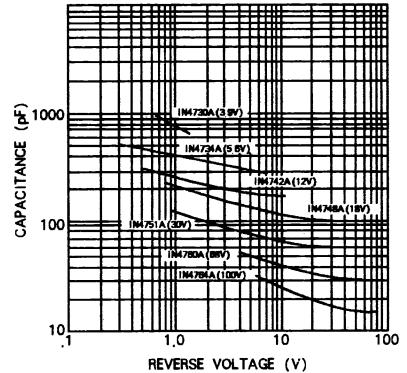
**NOTE 3** The zener surge current is measured at 25°C ambient using a 1/2 square wave or equivalent sine wave pulse 1/120 second duration superimposed on I<sub>ZT</sub>.

**NOTE 4** Voltage measurements to be performed 90 seconds after application of DC current.

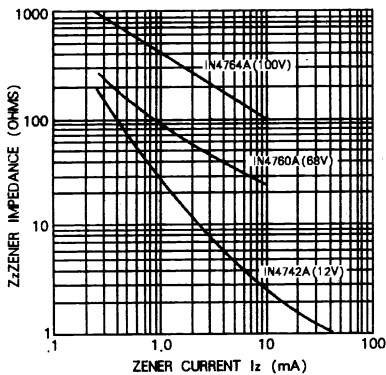
## RATINGS AND CHARACTERISTIC CURVES (1N4728A THRU 1N4764A)



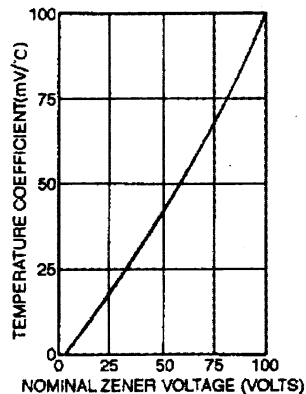
**FIGURE 1**  
 TYPICAL ZENER IMPEDANCE vs.  
 ZENER CURRENT FOR TYPES SHOWN



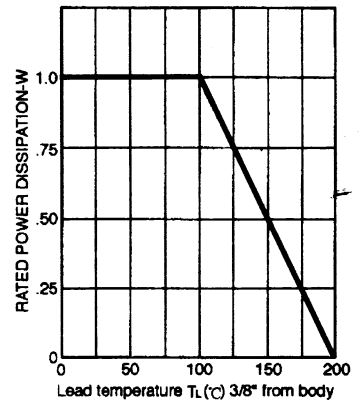
**FIGURE 2**  
 CAPACITANCE vs. VOLTAGE FOR  
 REPRESENTATIVE TYPES



**FIGURE 3**  
 TYPICAL ZENER IMPEDANCE vs.  
 ZENER CURRENT FOR TYPES SHOWN



**FIGURE 4**  
 TEMP. COEFF. vs. ZENER  
 VOLTAGE



**FIGURE 5**  
 POWER DERATING CURVE