



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

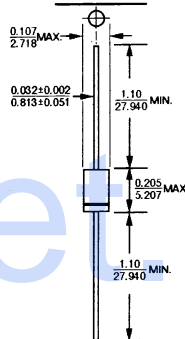
DC Power Dissipation: 1 Watt

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 (Vz) (Note 4) | TEST CURRENT IZT | MAXIMUM DYNAMIC IMPEDANCE ZzT @ IZT (Note 2) | MAXIMUM REVERSE CURRENT Ir @ Vr | TEST VOLTAGE (Vr) | MAXIMUM REGULATOR CURRENT (Izm) (Note 2) | MAXIMUM KNEE IMPEDANCE (Zzk @ Izk) (Note 2) | TEST CURRENT (Izk) mA | MAXIMUM (SURGE) CURRENT (Is) mA (Note 3) |
|----------------------------|-----------------------------|------------------|--|---------------------------------|-------------------|--|---|-----------------------|--|
| | | | | | | | | | |
| 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 |

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_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . 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_{ZT} .

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

* JEDEC Registered Data

RATINGS AND CHARACTERISTIC CURVES (1N4728A THRU 1N4764A)

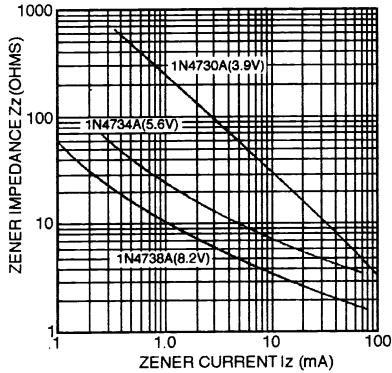


FIGURE 1
TYPICAL ZENER IMPEDANCE vs.
ZENER CURRENT FOR TYPES SHOWN

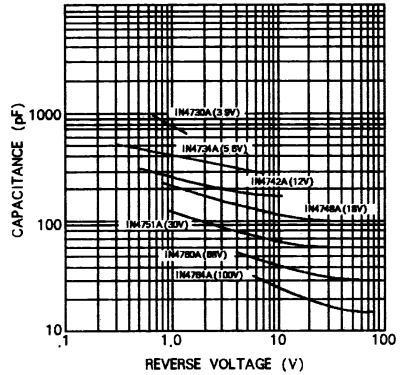


FIGURE 2
CAPACITANCE vs. VOLTAGE FOR
REPRESENTATIVE TYPES

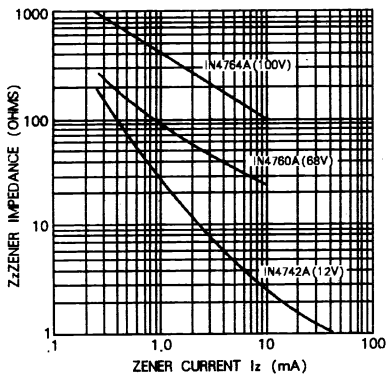


FIGURE 3
TYPICAL ZENER IMPEDANCE vs.
ZENER CURRENT FOR TYPES SHOWN

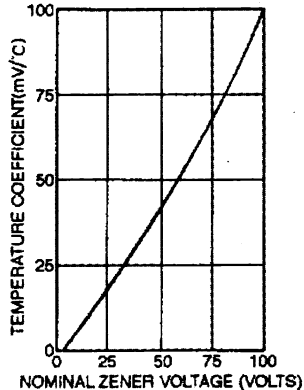


FIGURE 4
TEMP. COEFF. vs. ZENER
VOLTAGE

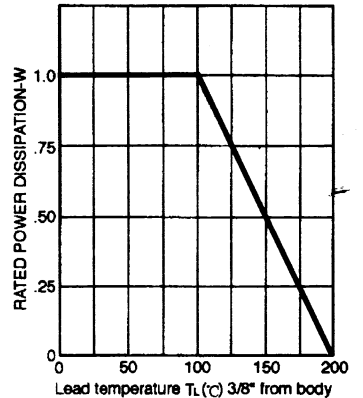


FIGURE 5
POWER DERATING CURVE