FAIRCHILD SEMICONDUCTOR®

April 2009

# 1N4728A - 1N4758A
# Zener Diodes

**Tolerance = 5%**



**DO-41 Glass case**

COLOR BAND DENOTES CATHODE

## Absolute Maximum Ratings * $T_a$ = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $P_D$ | Power Dissipation<br>@ TL ≤ 50°C, Lead Length = 3/8” | 1.0 | W |
| | Derate above 50°C | 6.67 | mW/°C |
| $T_J$, $T_{STG}$ | Operating and Storage Temperature Range | -65 to +200 | °C |

* These ratings are limiting values above which the serviceability of the diode may be impaired.

## Electrical Characteristics $T_a$ = 25°C unless otherwise noted

| Device | $V_Z$ (V) @ $I_Z$ (Note 1) | | | Test Current $I_Z$ (mA) | Max. Zener Impedance | | | Leakage Current | | Non-Repetitive Peak Reverse Current $I_{ZSM}$ (mA) (Note 2) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Min. | Typ. | Max. | | $Z_Z$ @ $I_Z$ (Ω) | $Z_{ZK}$ @ $I_{ZK}$ (Ω) | $I_{ZK}$ (mA) | $I_R$ (μA) | $V_R$ (V) | |
| 1N4728A | 3.135 | 3.3 | 3.465 | 76 | 10 | 400 | 1 | 100 | 1 | 1380 |
| 1N4729A | 3.42 | 3.6 | 3.78 | 69 | 10 | 400 | 1 | 100 | 1 | 1260 |
| 1N4730A | 3.705 | 3.9 | 4.095 | 64 | 9 | 400 | 1 | 50 | 1 | 1190 |
| 1N4731A | 4.085 | 4.3 | 4.515 | 58 | 9 | 400 | 1 | 10 | 1 | 1070 |
| 1N4732A | 4.465 | 4.7 | 4.935 | 53 | 8 | 500 | 1 | 10 | 1 | 970 |
| 1N4733A | 4.845 | 5.1 | 5.355 | 49 | 7 | 550 | 1 | 10 | 1 | 890 |
| 1N4734A | 5.32 | 5.6 | 5.88 | 45 | 5 | 600 | 1 | 10 | 2 | 810 |
| 1N4735A | 5.89 | 6.2 | 6.51 | 41 | 2 | 700 | 1 | 10 | 3 | 730 |
| 1N4736A | 6.46 | 6.8 | 7.14 | 37 | 3.5 | 700 | 1 | 10 | 4 | 660 |
| 1N4737A | 7.125 | 7.5 | 7.875 | 34 | 4 | 700 | 0.5 | 10 | 5 | 605 |
| 1N4738A | 7.79 | 8.2 | 8.61 | 31 | 4.5 | 700 | 0.5 | 10 | 6 | 550 |
| 1N4739A | 8.645 | 9.1 | 9.555 | 28 | 5 | 700 | 0.5 | 10 | 7 | 500 |
| 1N4740A | 9.5 | 10 | 10.5 | 25 | 7 | 700 | 0.25 | 10 | 7.6 | 454 |
| 1N4741A | 10.45 | 11 | 11.55 | 23 | 8 | 700 | 0.25 | 5 | 8.4 | 414 |
| 1N4742A | 11.4 | 12 | 12.6 | 21 | 9 | 700 | 0.25 | 5 | 9.1 | 380 |

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| Device | $V_Z$ (V) @ $I_Z$ (Note 1) | | | Test Current $I_Z$ (mA) | Max. Zener Impedance | | | Leakage Current | | Non-Repetitive Peak Reverse Current |
|---|---|---|---|---|---|---|---|---|---|---|
| | Min. | Typ. | Max. | | $Z_Z$ @ $I_Z$ (Ω) | $Z_{ZK}$ @ $I_{ZK}$ (Ω) | $I_{ZK}$ (mA) | $I_R$ (μA) | $V_R$ (V) | $I_{ZSM}$ (mA) (Note 2) |
| 1N4743A | 12.35 | 13 | 13.65 | 19 | 10 | 700 | 0.25 | 5 | 9.9 | 344 |
| 1N4744A | 14.25 | 15 | 15.75 | 17 | 14 | 700 | 0.25 | 5 | 11.4 | 304 |
| 1N4745A | 15.2 | 16 | 16.8 | 15.5 | 16 | 700 | 0.25 | 5 | 12.2 | 285 |
| 1N4746A | 17.1 | 18 | 18.9 | 14 | 20 | 750 | 0.25 | 5 | 13.7 | 250 |
| 1N4747A | 19 | 20 | 21 | 12.5 | 22 | 750 | 0.25 | 5 | 15.2 | 225 |
| 1N4748A | 20.9 | 22 | 23.1 | 11.5 | 23 | 750 | 0.25 | 5 | 16.7 | 205 |
| 1N4749A | 22.8 | 24 | 25.2 | 10.5 | 25 | 750 | 0.25 | 5 | 18.2 | 190 |
| 1N4750A | 25.65 | 27 | 28.35 | 9.5 | 35 | 750 | 0.25 | 5 | 20.6 | 170 |
| 1N4751A | 28.5 | 30 | 31.5 | 8.5 | 40 | 1000 | 0.25 | 5 | 22.8 | 150 |
| 1N4752A | 31.35 | 33 | 34.65 | 7.5 | 45 | 1000 | 0.25 | 5 | 25.1 | 135 |
| 1N4753A | 34.2 | 36 | 37.8 | 7 | 50 | 1000 | 0.25 | 5 | 27.4 | 125 |
| 1N4754A | 37.05 | 39 | 40.95 | 6.5 | 60 | 1000 | 0.25 | 5 | 29.7 | 115 |
| 1N4755A | 40.85 | 43 | 45.15 | 6 | 70 | 1500 | 0.25 | 5 | 32.7 | 110 |
| 1N4756A | 44.65 | 47 | 49.35 | 5.5 | 80 | 1500 | 0.25 | 5 | 35.8 | 95 |
| 1N4757A | 48.45 | 51 | 53.55 | 5 | 95 | 1500 | 0.25 | 5 | 38.8 | 90 |
| 1N4758A | 53.2 | 56 | 58.8 | 4.5 | 110 | 2000 | 0.25 | 5 | 42.6 | 80 |

**Notes:**

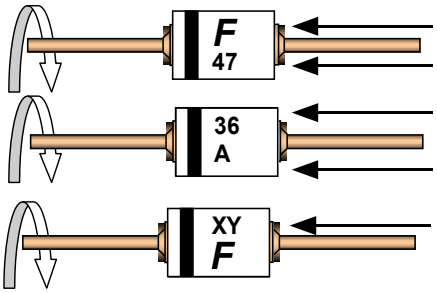
1. Zener Voltage ($V_Z$)
   The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature ($T_L$) at 30°C ± 1°C and 3/8" lead length.
2. 2 Square wave Reverse Surge at 8.3 msec soak time.

## Top Mark Information

| Device | Line 1 | Line 2 | Line 3 | Line 4 | Line 5 |
|---|---|---|---|---|---|
| 1N4728A | LOGO | 47 | 28 | A | XY |
| 1N4729A | LOGO | 47 | 29 | A | XY |
| 1N4730A | LOGO | 47 | 30 | A | XY |
| 1N4731A | LOGO | 47 | 31 | A | XY |
| 1N4732A | LOGO | 47 | 32 | A | XY |
| 1N4733A | LOGO | 47 | 33 | A | XY |
| 1N4734A | LOGO | 47 | 34 | A | XY |
| 1N4735A | LOGO | 47 | 35 | A | XY |
| 1N4736A | LOGO | 47 | 36 | A | XY |
| 1N4737A | LOGO | 47 | 37 | A | XY |
| 1N4738A | LOGO | 47 | 38 | A | XY |
| 1N4739A | LOGO | 47 | 39 | A | XY |
| 1N4740A | LOGO | 47 | 40 | A | XY |
| 1N4741A | LOGO | 47 | 41 | A | XY |
| 1N4742A | LOGO | 47 | 42 | A | XY |
| 1N4743A | LOGO | 47 | 43 | A | XY |
| 1N4744A | LOGO | 47 | 44 | A | XY |
| 1N4745A | LOGO | 47 | 45 | A | XY |
| 1N4746A | LOGO | 47 | 46 | A | XY |
| 1N4747A | LOGO | 47 | 47 | A | XY |
| 1N4748A | LOGO | 47 | 48 | A | XY |
| 1N4749A | LOGO | 47 | 49 | A | XY |
| 1N4750A | LOGO | 47 | 50 | A | XY |
| 1N4751A | LOGO | 47 | 51 | A | XY |
| 1N4752A | LOGO | 47 | 52 | A | XY |
| 1N4753A | LOGO | 47 | 53 | A | XY |
| 1N4754A | LOGO | 47 | 54 | A | XY |
| 1N4755A | LOGO | 47 | 55 | A | XY |
| 1N4756A | LOGO | 47 | 56 | A | XY |
| 1N4757A | LOGO | 47 | 57 | A | XY |
| 1N4758A | LOGO | 47 | 58 | A | XY |

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## Top Mark Information (Continued)




1st line: F - Fairchild Logo

2nd line: Device Name - 3rd to 4th characters of device name for 1Nxx series
or 4th to 6th characters for BZXyy series

3rd line: Device Name - 5th to 6th characters of device name for 1Nxx series
or Voltage rating for BZXyy series

4th line: Device Name - 7th to 8th characters of device name for 1Nxx series
or Large Die identification only for BZXyy series

5th line: Date Code - Two Digit - Six Weeks Date Code

### General Requirements:

1.0 Cathode Band

2.0 First Line: F - Fairchild Logo

3.0 Second Line: Device name - For 1Nxx series: 3rd to 4th characters of the device name.
For BZxx series: 4th to 6th characters of the device name.

4.0 Third Line: Device name - For 1Nxx series: 5th to 6th characters of the device name.
For BZXyy series: Voltage rating

5.0 Third Line: Device name - For 1Nxx series: 7th to 8th characters of the device name.
(the 8th character is the large die identification)

For BZXyy series: Large Die Identification character

6.0 Fourth Line: Date Code - Two Digit - Six Weeks Date Code
Where: X represents the last digit of the calendar year
Y represents the Six weeks numeric code

7.0 Devices shall be marked as required in the device specification (PID or FSC Test Spec).

8.0 Maximum no. of marking lines: 5

9.0 Maximum no. of digits per line: 3

10.0 FSC logo must be 20 % taller than the alphanumeric marking and should occupy the 2 characters of the specified line.

11.0 Marking Font: Arial (Except FSC Logo)

12.0 First character of each marking line must be aligned vertically.

13.0 All device markings must be based on Fairchild device specification.

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Rev. I40

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