

# 1N4728A - 1N4758A

## Zener Diodes

Tolerance = 5%



**DO-41 Glass case**  
COLOR BAND DENOTES CATHODE

### Absolute Maximum Ratings \*

T<sub>a</sub> = 25°C unless otherwise noted

| Symbol                            | Parameter                                                        | Value       | Units |
|-----------------------------------|------------------------------------------------------------------|-------------|-------|
| P <sub>D</sub>                    | Power Dissipation<br>@ T <sub>L</sub> ≤ 50°C, Lead Length = 3/8" | 1.0         | W     |
|                                   | Derate above 50°C                                                | 6.67        | mW/°C |
| T <sub>J</sub> , T <sub>STG</sub> | 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<sub>a</sub> = 25°C unless otherwise noted

| Device  | V <sub>Z</sub> (V) @ I <sub>Z</sub> (Note 1) |      |       | Test Current<br>I <sub>Z</sub> (mA) | Max. Zener Impedance                   |                                          |                         | Leakage Current        |                       | Non-Repetitive<br>Peak Reverse<br>Current<br>I <sub>ZSM</sub> (mA) (Note 2) |
|---------|----------------------------------------------|------|-------|-------------------------------------|----------------------------------------|------------------------------------------|-------------------------|------------------------|-----------------------|-----------------------------------------------------------------------------|
|         | Min.                                         | Typ. | Max.  |                                     | Z <sub>Z</sub> @ I <sub>Z</sub><br>(Ω) | Z <sub>ZK</sub> @<br>I <sub>ZK</sub> (Ω) | I <sub>ZK</sub><br>(mA) | I <sub>R</sub><br>(μA) | V <sub>R</sub><br>(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                                                                         |

| Device  | V <sub>Z</sub> (V) @ I <sub>Z</sub> (Note 1) |      |       | Test Current<br>I <sub>Z</sub> (mA) | Max. Zener Impedance                   |                                          |                         | Leakage Current        |                       | Non-Repetitive<br>Peak Reverse<br>Current<br>I <sub>ZSM</sub> (mA) (Note 2) |
|---------|----------------------------------------------|------|-------|-------------------------------------|----------------------------------------|------------------------------------------|-------------------------|------------------------|-----------------------|-----------------------------------------------------------------------------|
|         | Min.                                         | Typ. | Max.  |                                     | Z <sub>Z</sub> @ I <sub>Z</sub><br>(Ω) | Z <sub>ZK</sub> @<br>I <sub>ZK</sub> (Ω) | I <sub>ZK</sub><br>(mA) | I <sub>R</sub><br>(μA) | V <sub>R</sub><br>(V) |                                                                             |
| 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<sub>Z</sub>)

The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature (T<sub>L</sub>) 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     |

## Top Mark Information (Continued)



### General Requirements:

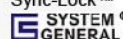
- 1.0 Cathode Band
- 2.0 First Line: F - Fairchild Logo
- 3.0 Second Line: Device name - For 1Nxx series: 3<sup>rd</sup> to 4<sup>th</sup> characters of the device name.  
For BZxx series: 4<sup>th</sup> to 6<sup>th</sup> characters of the device name.
- 4.0 Third Line: Device name - For 1Nxx series: 5<sup>th</sup> to 6<sup>th</sup> characters of the device name.  
For BZXyy series: Voltage rating
- 5.0 Third Line: Device name - For 1Nxx series: 7<sup>th</sup> to 8<sup>th</sup> 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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### Definition of Terms

| Datasheet Identification | Product Status        | Definition                                                                                                                                                                                          |
|--------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advance Information      | Formative / In Design | Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.                                                                       |
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Rev. 140