

# 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>@ TL ≤ 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 Peak Reverse 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> @ I <sub>ZK</sub><br>(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:**

- 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.
- 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 8<sup>th</sup> 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.



**TRADEMARKS**

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

- |  |   |   |   |
|--|---|---|---|
| Auto-SPM™  | F-PFS™  | PowerTrench®  | The Power Franchise®  |
| Build it Now™  | FRFET®  | PowerXS™  | <b>the power franchise</b>  |
| CorePLUS™  | Global Power Resource™  | Programmable Active Droop™  | TinyBoost™  |
| CorePOWER™   | Green FPS™  | QFET®   | TinyBuck™   |
| CROSSVOLT™   | Green FPS™ e-Series™  | QS™   | TinyLogic®  |
| CTL™   | Gmax™   | Quiet Series™   | TINYOPTO™   |
| Current Transfer Logic™  | GTO™  | RapidConfigure™   | TinyPower™  |
| EcoSPARK®  | IntelliMAX™   |  ™ | TinyPWM™  |
| EfficientMax™  | ISOPLANAR™  | Saving our world, 1mW/W/kW at a time™   | TinyWire™   |
| EZSWITCH™*   | MegaBuck™   | SmartMax™   | TriFault Detect™  |
|  ™* | MICROCOUPLER™   | SMART START™  | TRUECURRENT™*   |
|  ®  | MicroFET™   | SPM®  | µSerDes™  |
| Fairchild®   | MicroPak™   | STEALTH™  |  |
| Fairchild Semiconductor®   | MillerDrive™  | SuperFET™   | UHC®  |
| FACT Quiet Series™   | MotionMax™  | SuperSOT™-3   | Ultra FRFET™  |
| FACT®  | Motion-SPM™   | SuperSOT™-6   | UniFET™   |
| FAST®  | OPTOLOGIC®  | SuperSOT™-8   | VCC™  |
| FAST®  | OPTOPLANAR®   | SupreMOS™   | VisualMax™  |
| FastvCore™   |  ® | SyncFET™  | XS™   |
| FETBench™  | PDP SPM™  | Sync-Lock™  |   |
| FlashWriter®*  | Power-SPM™  |  * |   |
| FPS™   |   |   |   |

\* Trademarks of System General Corporation, used under license by Fairchild Semiconductor.

**DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

**LIFE SUPPORT POLICY**

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
- A critical component in any component of a life support device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

**ANTI-COUNTERFEITING POLICY**

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, [www.fairchildsemi.com](http://www.fairchildsemi.com), under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers buy either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

**PRODUCT STATUS DEFINITIONS**

**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.   |
| Preliminary              | First Production      | Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design. |
| No Identification Needed | Full Production       | Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.   |
| Obsolete                 | Not In Production     | Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.  |

Rev. 140

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Fairchild Semiconductor:](#)

[1N4745A\\_S00Z](#) [1N4745A\\_T50A](#) [1N4745ATR](#) [1N4745A\\_T50R](#) [1N4745A](#)