

# Zener Diodes

## 1N4728A - 1N4758A

### ABSOLUTE MAXIMUM RATINGS (Note 1)

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

| Symbol                            | Parameter                                                        | Value       | Unit  |
|-----------------------------------|------------------------------------------------------------------|-------------|-------|
| 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<br>Range                       | -65 to +200 | °C    |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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



AXIAL LEAD  
CASE 017AH

### MARKING DIAGRAM



### ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

# 1N4728A – 1N4758A

**ELECTRICAL CHARACTERISTICS**  $T_a = 25^\circ\text{C}$  unless otherwise noted

| Device  | $V_Z$ (V) @ $I_Z$ (Note 2) |      |       | Test Current $I_Z$ (mA) | Max. Zener Impedance       |                                  |               | Leakage Current         |           | Non-Repetitive Peak Reverse Current $I_{ZSM}$ (mA) (Note 3) |
|---------|----------------------------|------|-------|-------------------------|----------------------------|----------------------------------|---------------|-------------------------|-----------|-------------------------------------------------------------|
|         | Min.                       | Typ. | Max.  |                         | $Z_Z$ @ $I_Z$ ( $\Omega$ ) | $Z_{ZK}$ @ $I_{ZK}$ ( $\Omega$ ) | $I_{ZK}$ (mA) | $I_R$ ( $\mu\text{A}$ ) | $V_R$ (V) |                                                             |
| 1N4728A | 3.135                      | 3.3  | 3.465 | 76                      | 10                         | 400                              | 1             | 100                     | 1         | 1380                                                        |
| 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                                                         |
| 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                                                          |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## NOTES:

### 2. Zener Voltage ( $V_Z$ ).

The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature ( $T_L$ ) at  $30^\circ\text{C} \pm 1^\circ\text{C}$  and 3/8" lead length.

### 3. 2 Square wave Reverse Surge at 8.3 ms soak time.

# 1N4728A – 1N4758A

## TOP MARKING AND ORDERING INFORMATION

| Device       | Top Marking |        |        |        |        | Package                                 | Shipping <sup>†</sup> |
|--------------|-------------|--------|--------|--------|--------|-----------------------------------------|-----------------------|
|              | Line 1      | Line 2 | Line 3 | Line 4 | Line 5 |                                         |                       |
| 1N4728A      | LOGO        | 47     | 28     | A      | XY     | Axial Lead<br>(Pb – Free / Halide Free) | 3000 / Bulk Bag       |
| 1N4728A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4728ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4732A      |             |        | 32     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4732A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4732ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4733A      |             |        | 33     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4733A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4733A–T50R |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4733ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4734A      |             |        | 34     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4734A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4734A–T50R |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4734ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4735A      |             |        | 35     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4735A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4735A–T50R |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4735ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4736A      |             |        | 36     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4736A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4736A–T50R |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4736ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4737A      |             |        | 37     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4737A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4737ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4738A      |             |        | 38     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4738A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4738A–T50R |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4738ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4739A      |             |        | 39     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4739A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4739ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4740A      |             |        | 40     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4740A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4740ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4741A      |             |        | 41     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4741A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4741ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4742A      |             |        | 42     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4742A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4742ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |

# 1N4728A – 1N4758A

## TOP MARKING AND ORDERING INFORMATION (continued)

| Device       | Top Marking |        |        |        |        | Package                                 | Shipping <sup>†</sup> |
|--------------|-------------|--------|--------|--------|--------|-----------------------------------------|-----------------------|
|              | Line 1      | Line 2 | Line 3 | Line 4 | Line 5 |                                         |                       |
| 1N4743A      | LOGO        | 47     | 43     | A      | XY     | Axial Lead<br>(Pb – Free / Halide Free) | 3000 / Bulk Bag       |
| 1N4743A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4743ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4744A      |             |        | 44     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4744A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4744A–T50R |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4744ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4745A      |             |        | 45     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4745A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4745ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4746A      |             |        | 46     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4746A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4746ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4747A      |             |        | 47     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4747A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4747ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4748A      |             |        | 48     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4748A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4748ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4749A      |             |        | 49     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4749A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4749A–T50R |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4749ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4750A      |             |        | 50     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4750A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4750ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4751A      |             |        | 51     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4751A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4751ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4752A      |             |        | 52     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4752A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4752ATR    |             |        |        |        |        |                                         | 3000 / Tape and Reel  |
| 1N4753A      |             |        | 53     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4753A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4754A      |             |        | 54     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4754A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4755A      |             |        | 55     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4755A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |
| 1N4756A      |             |        | 56     |        |        |                                         | 3000 / Bulk Bag       |
| 1N4757A      |             |        | 57     |        |        |                                         | 3000 / Bulk Bag       |

## 1N4728A – 1N4758A

### TOP MARKING AND ORDERING INFORMATION (continued)

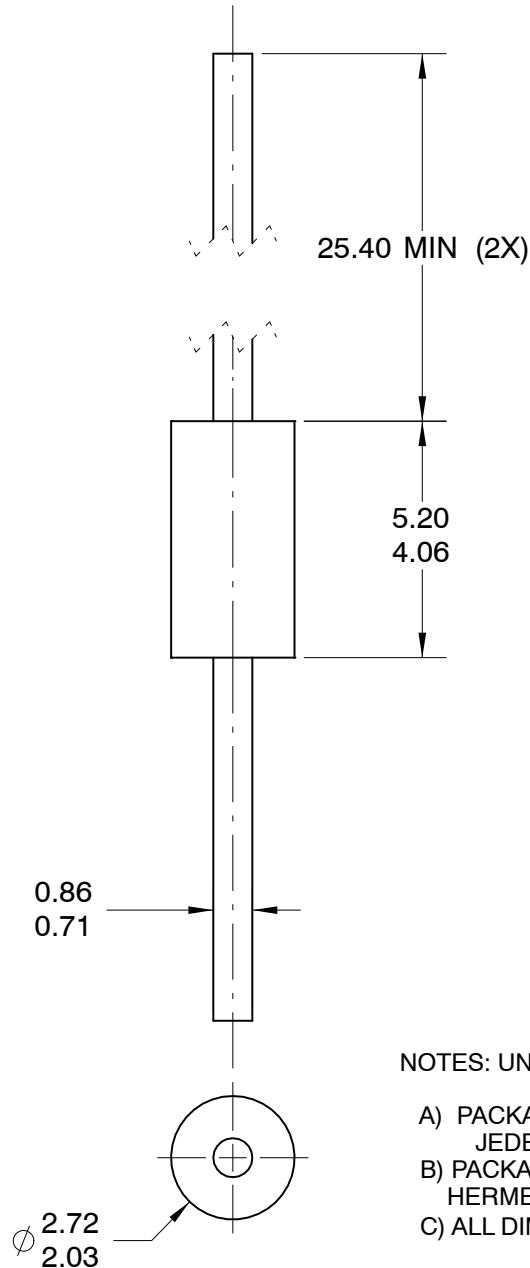
| Device       | Top Marking |        |        |        |        | Package                                 | Shipping <sup>†</sup> |
|--------------|-------------|--------|--------|--------|--------|-----------------------------------------|-----------------------|
|              | Line 1      | Line 2 | Line 3 | Line 4 | Line 5 |                                         |                       |
| 1N4758A      | LOGO        | 47     | 58     | A      | XY     | Axial Lead<br>(Pb – Free / Halide Free) | 3000 / Bulk Bag       |
| 1N4758A–T50A |             |        |        |        |        |                                         | 3000 / Fan–Fold       |

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.



**AXIAL LEAD / DO-41**  
CASE 017AH  
ISSUE O

DATE 31 AUG 2016



NOTES: UNLESS OTHERWISE SPECIFIED

- A) PACKAGE STANDARD REFERENCE:  
JEDEC DO-204 VARIATION AL.
- B) PACKAGE BODY CAN BE PLASTIC OR  
HERMETICALLY SEALED GLASS.
- C) ALL DIMENSIONS ARE IN MILLIMETERS.

|                         |                           |                                                                                                                                                                                     |
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