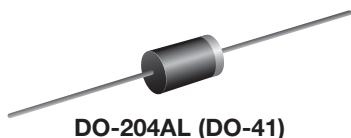


## Glass Passivated Power Voltage-Regulating Diodes



DO-204AL (DO-41)

### FEATURES

- Plastic MELF package
- Ideal for automated placement
- Glass passivated chip junction
- Low Zener impedance
- Low regulation factor
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### MECHANICAL DATA

**Case:** DO-204AL (DO-41)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

### PRIMARY CHARACTERISTICS

|                               |                   |
|-------------------------------|-------------------|
| $V_Z$                         | 100 V to 200 V    |
| $P_{tot}$                     | 1500 mW           |
| $I_R (V_Z \geq 12 \text{ V})$ | 5.0 $\mu\text{A}$ |
| $T_J \text{ max.}$            | 150 °C            |
| $V_Z$ specification           | Pulse current     |
| Int. construction             | Single            |

### TYPICAL APPLICATIONS

For general purpose regulation and protection applications.

### MAXIMUM RATINGS ( $T_A = 25 \text{ °C}$ unless otherwise noted)

| PARAMETER                                        | SYMBOL         | VALUE         | UNIT |
|--------------------------------------------------|----------------|---------------|------|
| Operating junction and storage temperature range | $T_J, T_{STG}$ | - 55 to + 150 | °C   |

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

| PART<br>NUMBER <sup>(1)</sup> | ZENER VOLTAGE<br>RANGE |      |      | TEST<br>CURRENT |          | MAXIMUM<br>ZENER<br>IMPEDANCE |                      | MAXIMUM<br>REVERSE<br>CURRENT |                        | MAXIMUM<br>CONTINUOUS<br>FORWARD<br>VOLTAGE | MAXIMUM<br>ZENER<br>CURRENT |
|-------------------------------|------------------------|------|------|-----------------|----------|-------------------------------|----------------------|-------------------------------|------------------------|---------------------------------------------|-----------------------------|
|                               | $V_Z$ at $I_{ZT}$      |      |      | $I_{ZT}$        | $I_{ZK}$ | $Z_{ZT}$ at $I_{ZT}$          | $Z_{ZK}$ at $I_{ZK}$ | $I_R$ at $V_R$                |                        | $V_{FM}$ at 0.5 A                           | $I_{ZM}$                    |
|                               | V                      |      |      | mA              |          | $\Omega$                      |                      | $\mu\text{A}$                 |                        | V                                           | V                           |
|                               | MIN.                   | NOM. | MAX. |                 |          | MAX.                          | MAX.                 | 25 $^{\circ}\text{C}$         | 100 $^{\circ}\text{C}$ |                                             | MAX.                        |
| Z4KE100A                      | 95                     | 100  | 105  | 5.0             | 0.25     | 500                           | 5000                 | 0.5                           | 100                    | 76.0                                        | 1.0                         |
| Z4KE110A                      | 104                    | 110  | 116  | 5.0             | 0.25     | 600                           | 5000                 | 0.5                           | 100                    | 83.2                                        | 1.0                         |
| Z4KE120A                      | 114                    | 120  | 126  | 5.0             | 0.25     | 700                           | 5000                 | 0.5                           | 100                    | 91.2                                        | 1.0                         |
| Z4KE130A                      | 124                    | 130  | 137  | 5.0             | 0.25     | 800                           | 5000                 | 0.5                           | 100                    | 99.2                                        | 1.0                         |
| Z4KE140A                      | 133                    | 140  | 147  | 5.0             | 0.25     | 900                           | 5500                 | 0.5                           | 100                    | 106.4                                       | 1.0                         |
| Z4KE150A                      | 142                    | 150  | 158  | 5.0             | 0.25     | 1000                          | 6000                 | 0.5                           | 100                    | 113.6                                       | 1.0                         |
| Z4KE160A                      | 152                    | 160  | 168  | 5.0             | 0.25     | 1100                          | 6500                 | 0.5                           | 100                    | 121.6                                       | 1.0                         |
| Z4KE170A                      | 162                    | 170  | 179  | 5.0             | 0.25     | 1200                          | 7000                 | 0.5                           | 100                    | 129.6                                       | 1.0                         |
| Z4KE180A                      | 171                    | 180  | 189  | 5.0             | 0.25     | 1300                          | 7000                 | 0.5                           | 100                    | 136.8                                       | 1.0                         |
| Z4KE190A                      | 180                    | 190  | 200  | 5.0             | 0.25     | 1400                          | 7500                 | 0.5                           | 100                    | 144.0                                       | 1.0                         |
| Z4KE200A                      | 190                    | 200  | 210  | 5.0             | 0.25     | 1500                          | 8000                 | 0.5                           | 100                    | 152.0                                       | 1.0                         |

**Note**

<sup>(1)</sup> Maximum power dissipation is 1500 mW at  $T_L = 75\text{ }^{\circ}\text{C}$  with lead length 0.375" (9.5 mm)

**ORDERING INFORMATION** (Example)

| PREFERRED P/N                 | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
|-------------------------------|-----------------|------------------------|---------------|------------------------------------|
| Z4KE100A-E3/54                | 0.350           | 54                     | 5500          | 13" diameter plastic tape and reel |
| Z4KE100AHE3/54 <sup>(1)</sup> | 0.350           | 54                     | 5500          | 13" diameter plastic tape and reel |

**Note**

<sup>(1)</sup> AEC-Q101 qualified



## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

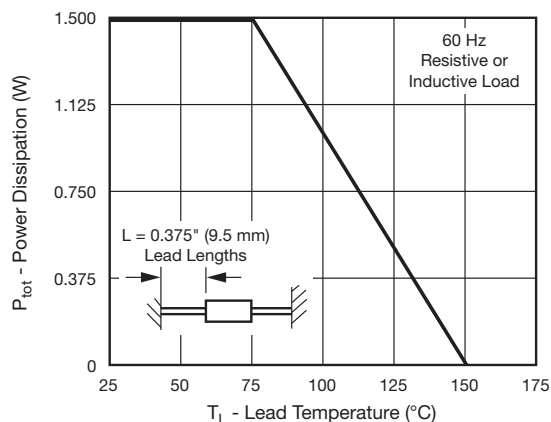


Fig. 1 - Power Derating Curve

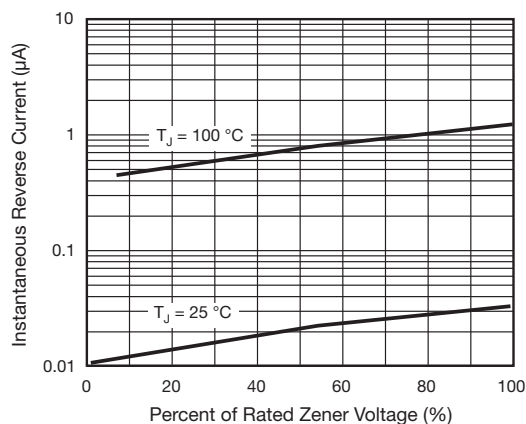


Fig. 4 - Typical Reverse Characteristics

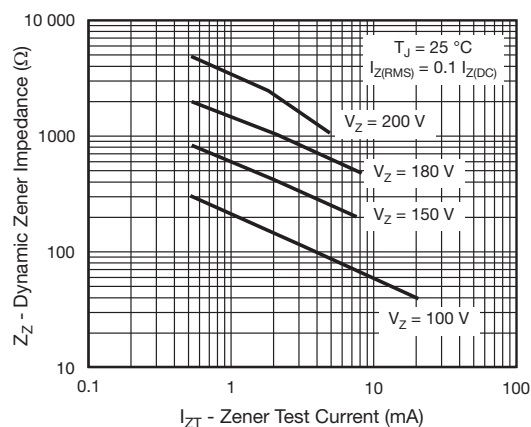


Fig. 2 - Typical Zener Impedance

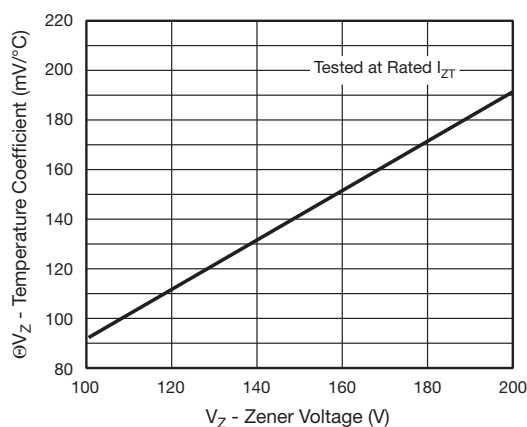


Fig. 5 - Typical Temperature Coefficients

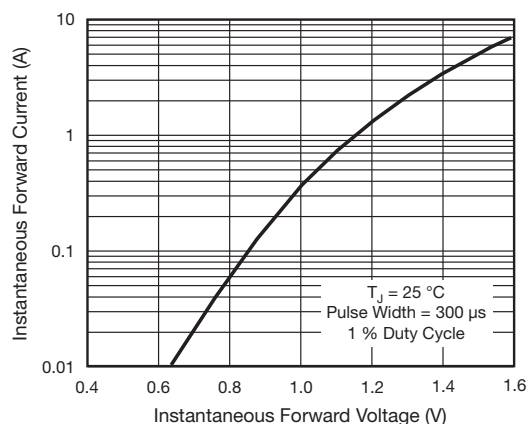


Fig. 3 - Typical Instantaneous Forward Characteristics

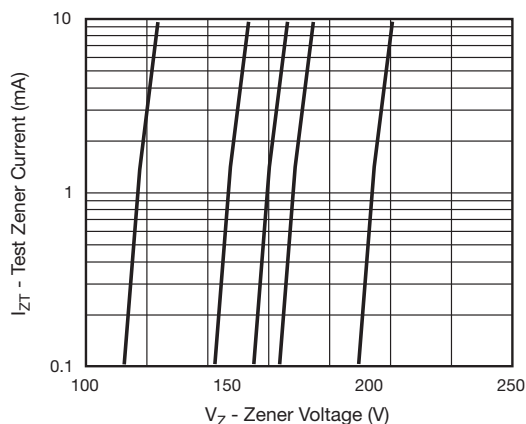
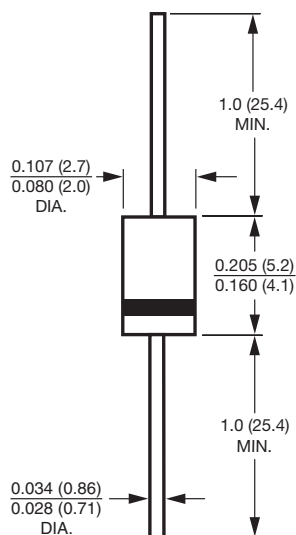


Fig. 6 - Typical Zener Voltage



## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AL (DO-41)





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