




**5.0 W Glass Passivated Zener Diodes**

|  |  |   |   |
|--|--|---|---|
| <p><b>DO-201AE</b></p>    | <p><b>Voltage</b><br/>7.5 to 200 V</p>   | <p><b>Power Dissipation</b><br/>5.0 W</p> |   |
|  |    |   |   |
|  | <p><b>FEATURE</b></p> <ul style="list-style-type: none"> <li>• Glass passivated chip junction</li> <li>• Hiperectifier structure for high reliability</li> <li>• Cavity-free glass-passivated junction</li> <li>• Low leakage current</li> <li>• High surge current and zener capability</li> <li>• Low differential resistance</li> <li>• Low forward voltage drop</li> <li>• Solder dip 260 °C, 10s</li> <li>• AEC-Q101 qualified</li> <li>• Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC</li> </ul> |   |  |
|  | <p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• <b>Case:</b> DO-201AE. Epoxy meets UL 94V-0 flammability rating.</li> <li>• <b>Polarity:</b> Color band denotes cathode end.</li> <li>• <b>Terminals:</b> Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test.</li> </ul>   |   |   |
| <p><b>TYPICAL APPLICATIONS</b></p> <p>Used for basic regulation functions in most electronic applications, Zener diodes offer a cheaper alternative to IC solutions.</p> |  |   |   |

**Maximum Ratings and Electrical Characteristics at 25 °C**

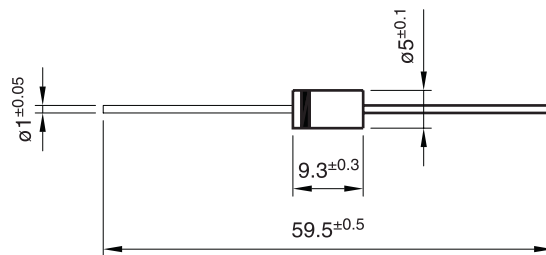
| SYMBOL      | TYPE NUMBER   | VALUE       | UNIT |
|-------------|---|-------------|------|
| $P_{tot}$   | Power dissipation at $T_{amb} = 75\text{ °C}$                 | 5.0         | W    |
| $P_{ZSM}$   | Non repetitive peak zener dissipation ( $t = 8.3\text{ ms}$ ) | 180         | W    |
| $T_j$       | Operatin Temperature Range                                    | -55 to +175 | °C   |
| $T_{stg}$   | Storage Temperature Range                                     | -55 to +175 | °C   |
| $V_F$       | Max. forward voltage drop at $I_F = 3.0\text{ A}$             | 1.2         | V    |
| $R_{thj-a}$ | Max. thermal resistance at 10 mm. Lead length                 | 20          | °C/W |

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**Ordering information**

| PREFERRED P/N | PACKAGE CODE | DELIVERY MODE              | BASE QUANTITY | UNIT WEIGHT (g) |
|---------------|--------------|----------------------------|---------------|-----------------|
| 1N5348B TR    | TR           | 14" diameter tape and reel | 1,500         | 0.968           |
| 1N5348B AMP   | AMP          | AMMO BOX                   | 1,500         | 0.968           |

**Package Outline Dimensions: (mm) DO-201AE**



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| Type    | Nominal (1) Zener Voltage | Test Current | Maximum Zener Impedance |                   |          | Maximum Reverse Leakage Current |       | Max. Surge Current 8.3 ms. | Maximum Regulator Current | Max. Voltage Regulation |
|---------|---------------------------|--------------|-------------------------|-------------------|----------|---------------------------------|-------|----------------------------|---------------------------|-------------------------|
|         | $V_z$ at $I_{zT}$         | $I_{zT}$     | $V_z$ at $I_{zT}$       | $V_K$ at $I_{zK}$ | $I_{zK}$ | $I_R$ @                         | $V_R$ | $I_{zS}$                   | $I_{zM}$                  | $V_z$ Volts (2)         |
|         | (V)                       | (mA)         | ( $\Omega$ )            | ( $\Omega$ )      | (mA)     | ( $\mu$ A)                      | (V)   | (A)                        | (mA)                      | (V)                     |
| 1N5343B | 7.5                       | 175          | 1.5                     | 200               | 1        | 10                              | 5.7   | 10.7                       | 630                       | 0.15                    |
| 1N5344B | 8.2                       | 150          | 1.5                     | 200               | 1        | 10.0                            | 6.2   | 10                         | 580                       | 0.2                     |
| 1N5345B | 8.7                       | 150          | 2.0                     | 200               | 1        | 10.0                            | 6.6   | 9.5                        | 545                       | 0.2                     |
| 1N5346B | 9.1                       | 150          | 2.0                     | 150               | 1        | 7.5                             | 6.9   | 9.2                        | 520                       | 0.22                    |
| 1N5347B | 10                        | 125          | 2.0                     | 125               | 1        | 5.0                             | 7.6   | 8.6                        | 475                       | 0.22                    |
| 1N5348B | 11                        | 125          | 2.5                     | 125               | 1        | 5.0                             | 8.4   | 8.0                        | 430                       | 0.25                    |
| 1N5349B | 12                        | 100          | 2.5                     | 125               | 1        | 2.0                             | 9.1   | 7.5                        | 395                       | 0.25                    |
| 1N5350B | 13                        | 100          | 2.5                     | 100               | 1        | 1.0                             | 9.9   | 7.0                        | 365                       | 0.25                    |
| 1N5351B | 14                        | 100          | 2.5                     | 75                | 1        | 1.0                             | 10.6  | 6.7                        | 340                       | 0.25                    |
| 1N5352B | 15                        | 75           | 2.5                     | 75                | 1        | 1.0                             | 11.5  | 6.3                        | 315                       | 0.25                    |
| 1N5353B | 16                        | 75           | 2.5                     | 75                | 1        | 1.0                             | 12.2  | 6.0                        | 295                       | 0.3                     |
| 1N5354B | 17                        | 70           | 2.5                     | 75                | 1        | 0.5                             | 12.9  | 5.8                        | 280                       | 0.35                    |
| 1N5355B | 18                        | 65           | 2.5                     | 75                | 1        | 0.5                             | 13.7  | 5.5                        | 264                       | 0.4                     |
| 1N5356B | 19                        | 65           | 3.0                     | 75                | 1        | 0.5                             | 14.4  | 5.3                        | 250                       | 0.4                     |
| 1N5357B | 20                        | 65           | 3.0                     | 75                | 1        | 0.5                             | 15.2  | 5.1                        | 237                       | 0.4                     |
| 1N5358B | 22                        | 50           | 3.5                     | 75                | 1        | 0.5                             | 16.7  | 4.7                        | 216                       | 0.45                    |
| 1N5359B | 24                        | 50           | 3.5                     | 100               | 1        | 0.5                             | 18.2  | 4.4                        | 198                       | 0.55                    |
| 1N5360B | 25                        | 50           | 4.0                     | 110               | 1        | 0.5                             | 19.0  | 4.3                        | 190                       | 0.55                    |
| 1N5361B | 27                        | 50           | 5.0                     | 120               | 1        | 0.5                             | 20.6  | 4.1                        | 176                       | 0.6                     |
| 1N5362B | 28                        | 50           | 6.0                     | 130               | 1        | 0.5                             | 21.2  | 3.9                        | 170                       | 0.6                     |
| 1N5363B | 30                        | 40           | 8.0                     | 140               | 1        | 0.5                             | 22.8  | 3.7                        | 158                       | 0.6                     |
| 1N5364B | 33                        | 40           | 10.0                    | 150               | 1        | 0.5                             | 25.1  | 3.5                        | 144                       | 0.6                     |
| 1N5365B | 36                        | 30           | 11.0                    | 160               | 1        | 0.5                             | 27.4  | 3.3                        | 132                       | 0.65                    |
| 1N5366B | 39                        | 30           | 14.0                    | 170               | 1        | 0.5                             | 29.7  | 3.1                        | 122                       | 0.65                    |
| 1N5367B | 43                        | 30           | 20.0                    | 190               | 1        | 0.5                             | 32.7  | 2.8                        | 110                       | 0.7                     |
| 1N5368B | 47                        | 25           | 25.0                    | 210               | 1        | 0.5                             | 35.8  | 2.7                        | 100                       | 0.8                     |
| 1N5369B | 51                        | 25           | 27.0                    | 230               | 1        | 0.5                             | 38.8  | 2.5                        | 93                        | 0.9                     |
| 1N5370B | 56                        | 20           | 35.0                    | 280               | 1        | 0.5                             | 42.6  | 2.3                        | 86                        | 1                       |
| 1N5371B | 60                        | 20           | 40.0                    | 350               | 1        | 0.5                             | 45.5  | 2.2                        | 79                        | 1.2                     |
| 1N5372B | 62                        | 20           | 42.0                    | 400               | 1        | 0.5                             | 47.1  | 2.1                        | 76                        | 1.35                    |
| 1N5373B | 68                        | 20           | 44.0                    | 500               | 1        | 0.5                             | 51.7  | 2.0                        | 70                        | 1.5                     |
| 1N5374B | 75                        | 20           | 45.0                    | 620               | 1        | 0.5                             | 56.0  | 1.9                        | 63                        | 1.6                     |
| 1N5375B | 82                        | 15           | 65.0                    | 720               | 1        | 0.5                             | 62.2  | 1.8                        | 58                        | 1.8                     |
| 1N5376B | 87                        | 15           | 75.0                    | 760               | 1        | 0.5                             | 66.0  | 1.7                        | 54.5                      | 2                       |
| 1N5377B | 91                        | 15           | 75.0                    | 760               | 1        | 0.5                             | 69.2  | 1.6                        | 52.5                      | 2.2                     |
| 1N5378B | 100                       | 12           | 90.0                    | 800               | 1        | 0.5                             | 76.0  | 1.5                        | 47.5                      | 2.5                     |
| 1N5379B | 110                       | 12           | 125.0                   | 1000              | 1        | 0.5                             | 83.6  | 1.4                        | 43                        | 2.5                     |
| 1N5380B | 120                       | 10           | 170.0                   | 1150              | 1        | 0.5                             | 91.2  | 1.3                        | 39.5                      | 2.5                     |
| 1N5381B | 130                       | 10           | 190.0                   | 1250              | 1        | 0.5                             | 98.8  | 1.2                        | 36.5                      | 2.5                     |
| 1N5382B | 140                       | 8            | 230.0                   | 1500              | 1        | 0.5                             | 106.0 | 1.2                        | 34                        | 2.5                     |
| 1N5383B | 150                       | 8            | 330.0                   | 1500              | 1        | 0.5                             | 114.0 | 1.1                        | 31.6                      | 3                       |
| 1N5384B | 160                       | 8            | 350.0                   | 1650              | 1        | 0.5                             | 122.0 | 1.1                        | 29.4                      | 3                       |
| 1N5385B | 170                       | 8            | 380.0                   | 1750              | 1        | 0.5                             | 129.0 | 1.0                        | 28                        | 3                       |
| 1N5386B | 180                       | 5            | 430.0                   | 1750              | 1        | 0.5                             | 137.0 | 1.0                        | 26.4                      | 4                       |
| 1N5387B | 190                       | 5            | 450.0                   | 1850              | 1        | 0.5                             | 144.0 | 0.9                        | 25                        | 5                       |
| 1N5388B | 200                       | 5            | 480.0                   | 1850              | 1        | 0.5                             | 152.0 | 0.9                        | 23.6                      | 5                       |

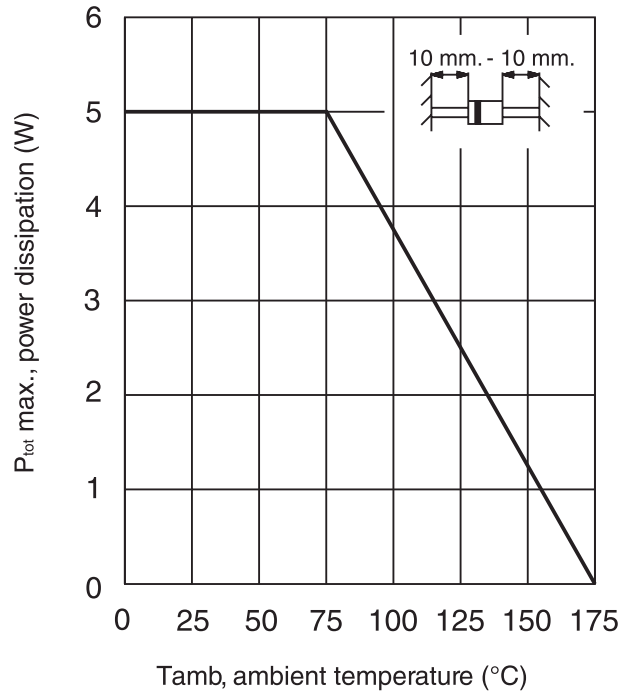
(1) Tested with pulses. Pulse test:  $t_p$  - 50 ms;  $d < 2\%$ .

(2) Test conditions for voltage regulation are as follows.  $V_z$  measurements are made at 10% and then at 50% of the  $I_z$  max value listed in the electrical characteristics table.

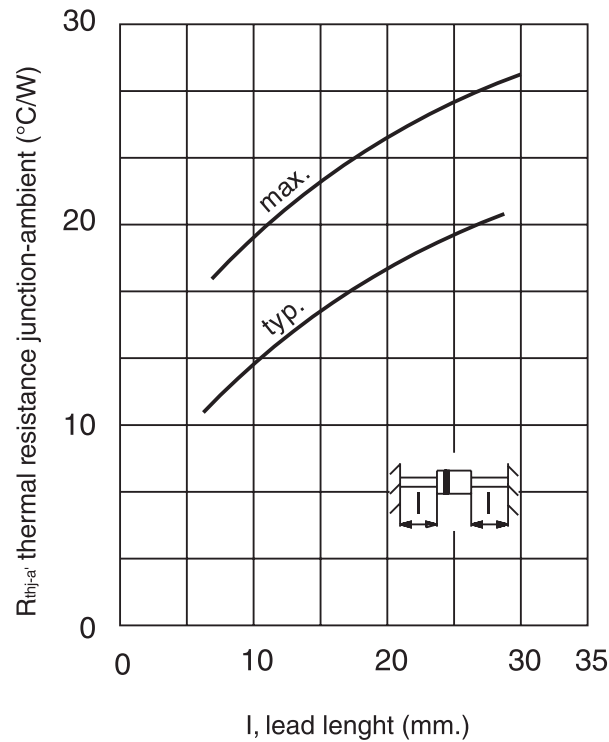
**5.0 W Glass Passivated Zener Diodes**

**Rating and Characteristics** (Ta 25 °C unless otherwise noted)

MAXIMUM CONTINUOUS POWER DISSIPATION



THERMAL RESISTANCE



**5.0 W Glass Passivated Zener Diodes****Revision History**

| DATE        | REVISION | DESCRIPTION OF CHANGES            |
|-------------|----------|-----------------------------------|
| 15-May-2016 | 0        | Original Data Sheet               |
| 16-Feb-2018 | 1        | Remove Tolerance Series $\pm 5\%$ |

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