

**CZ5334B THRU CZ5388B**

**SILICON ZENER DIODES**  
**3.3 THRU 200 VOLT**  
**5W, 5% TOLERANCE**


[www.centrasemi.com](http://www.centrasemi.com)
**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CZ5334B series silicon Zener diodes are high quality voltage regulators designed for use in industrial, commercial, entertainment, and computer applications.

**MARKING: FULL PART NUMBER****DO-201 CASE****MAXIMUM RATINGS:** ( $T_L=75^\circ\text{C}$ )

Power Dissipation (Note 1)

Operating and Storage Junction Temperature

 $V_Z$  Tolerance: Part number with "B" suffix $V_Z$  Tolerance: Part number with "C" suffix $V_Z$  Tolerance: Part number with "D" suffix**SYMBOL** $P_D$  $T_J, T_{stg}$ 

5.0

-65 to +200

 $\pm 5$  $\pm 2$  $\pm 1$ **UNITS**

W

 $^\circ\text{C}$ 

%

%

%

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$ )  $V_F=1.2\text{V MAX @ } I_F=1.0\text{A}$  (for all types)

| Type    | Zener Voltage<br>$V_Z @ I_{ZT}$ |     |       | Test Current | Maximum Zener Impedance |                   |     | Maximum Reverse Current |      | Maximum Surge Current (Note 2) | Maximum Voltage Regulation (Note 3) | Maximum Regulator Current |
|---------|---------------------------------|-----|-------|--------------|-------------------------|-------------------|-----|-------------------------|------|--------------------------------|-------------------------------------|---------------------------|
|         | MIN                             | NOM | MAX   | $I_{ZT}$     | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ |     | $I_R @ V_R$             |      | $i_r$                          | $\Delta V_Z$                        | $I_{ZM}$                  |
|         | V                               | V   | V     | mA           | $\Omega$                | $\Omega$          | mA  | $\mu\text{A}$           | V    | A                              | V                                   | mA                        |
| CZ5334B | 3.420                           | 3.6 | 3.780 | 350          | 2.5                     | 500               | 1.0 | 150                     | 1.0  | 18.7                           | 0.80                                | 1320                      |
| CZ5335B | 3.705                           | 3.9 | 4.095 | 320          | 2.0                     | 500               | 1.0 | 50                      | 1.0  | 17.6                           | 0.54                                | 1220                      |
| CZ5336B | 4.085                           | 4.3 | 4.515 | 290          | 2.0                     | 500               | 1.0 | 10                      | 1.0  | 16.4                           | 0.49                                | 1100                      |
| CZ5337B | 4.465                           | 4.7 | 4.935 | 260          | 2.0                     | 450               | 1.0 | 10                      | 1.0  | 15.3                           | 0.44                                | 1010                      |
| CZ5338B | 4.845                           | 5.1 | 5.355 | 240          | 1.5                     | 400               | 1.0 | 10                      | 1.0  | 14.4                           | 0.39                                | 930                       |
| CZ5339B | 5.320                           | 5.6 | 5.880 | 220          | 1.0                     | 400               | 1.0 | 10                      | 2.0  | 13.4                           | 0.25                                | 865                       |
| CZ5340B | 5.700                           | 6.0 | 6.300 | 200          | 1.0                     | 300               | 1.0 | 10                      | 3.0  | 12.7                           | 0.25                                | 790                       |
| CZ5341B | 5.890                           | 6.2 | 6.510 | 200          | 1.0                     | 200               | 1.0 | 10                      | 3.0  | 12.4                           | 0.25                                | 765                       |
| CZ5342B | 6.460                           | 6.8 | 7.140 | 175          | 1.0                     | 200               | 1.0 | 100                     | 5.2  | 11.5                           | 0.25                                | 700                       |
| CZ5343B | 7.125                           | 7.5 | 7.875 | 175          | 1.5                     | 200               | 1.0 | 100                     | 5.7  | 10.7                           | 0.25                                | 630                       |
| CZ5344B | 7.790                           | 8.2 | 8.610 | 150          | 1.5                     | 200               | 1.0 | 100                     | 6.2  | 10.0                           | 0.20                                | 580                       |
| CZ5345B | 8.265                           | 8.7 | 9.135 | 150          | 2.0                     | 200               | 1.0 | 100                     | 6.6  | 7.5                            | 0.20                                | 545                       |
| CZ5346B | 8.645                           | 9.1 | 9.555 | 150          | 2.0                     | 150               | 1.0 | 7.5                     | 6.9  | 9.2                            | 0.22                                | 520                       |
| CZ5347B | 9.500                           | 10  | 10.50 | 125          | 2.0                     | 125               | 1.0 | 5.0                     | 7.6  | 8.6                            | 0.22                                | 475                       |
| CZ5348B | 10.45                           | 11  | 11.55 | 125          | 2.5                     | 125               | 1.0 | 5.0                     | 8.4  | 8.0                            | 0.25                                | 430                       |
| CZ5349B | 11.40                           | 12  | 12.60 | 100          | 2.5                     | 125               | 1.0 | 2.0                     | 9.1  | 7.5                            | 0.25                                | 395                       |
| CZ5350B | 12.35                           | 13  | 13.65 | 100          | 2.5                     | 100               | 1.0 | 1.0                     | 9.9  | 7.0                            | 0.25                                | 365                       |
| CZ5351B | 13.30                           | 14  | 14.70 | 100          | 2.5                     | 75                | 1.0 | 1.0                     | 10.6 | 6.7                            | 0.25                                | 340                       |
| CZ5352B | 14.25                           | 15  | 15.75 | 75           | 2.5                     | 75                | 1.0 | 1.0                     | 11.5 | 6.3                            | 0.25                                | 315                       |
| CZ5353B | 15.20                           | 16  | 16.80 | 75           | 2.5                     | 75                | 1.0 | 1.0                     | 12.2 | 6.0                            | 0.30                                | 295                       |
| CZ5354B | 16.15                           | 17  | 17.85 | 70           | 2.5                     | 75                | 1.0 | 0.5                     | 12.9 | 5.8                            | 0.35                                | 280                       |
| CZ5355B | 17.10                           | 18  | 18.90 | 65           | 2.5                     | 75                | 1.0 | 0.5                     | 13.7 | 5.5                            | 0.40                                | 264                       |
| CZ5356B | 18.05                           | 19  | 19.95 | 65           | 3.0                     | 75                | 1.0 | 0.5                     | 14.4 | 5.3                            | 0.40                                | 250                       |
| CZ5357B | 19.00                           | 20  | 21.00 | 65           | 3.0                     | 75                | 1.0 | 0.5                     | 15.2 | 5.1                            | 0.40                                | 237                       |
| CZ5358B | 20.90                           | 22  | 23.10 | 50           | 3.5                     | 75                | 1.0 | 0.5                     | 16.7 | 4.7                            | 0.45                                | 216                       |
| CZ5359B | 22.80                           | 24  | 25.20 | 50           | 3.5                     | 100               | 1.0 | 0.5                     | 18.2 | 4.4                            | 0.55                                | 198                       |

R9 (15-December 2016)

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ELECTRICAL CHARACTERISTICS - Continued: ( $T_A=25^\circ\text{C}$ )  $V_F=1.2\text{V MAX @ } I_F=1.0\text{A}$  (for all types)

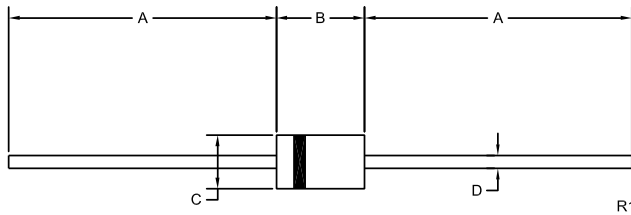
| Type    | Zener Voltage<br>V <sub>Z</sub> @ I <sub>ZT</sub> |     |       | Test Current<br>I <sub>ZT</sub> | Maximum Zener Impedance |                                   |                                   | Maximum Reverse Current         |      | Maximum Surge Current<br>(Note 2)<br>I <sub>T</sub> | Maximum Voltage Regulation<br>(Note 3)<br>ΔV <sub>Z</sub> | Maximum Regulator Current<br>I <sub>ZM</sub> |
|---------|---------------------------------------------------|-----|-------|---------------------------------|-------------------------|-----------------------------------|-----------------------------------|---------------------------------|------|-----------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
|         | MIN                                               | NOM | MAX   |                                 | I <sub>ZT</sub>         | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> |      |                                                     |                                                           |                                              |
|         | V                                                 | V   | V     |                                 | mA                      | Ω                                 | Ω                                 | mA                              | μA   |                                                     |                                                           |                                              |
| CZ5360B | 23.75                                             | 25  | 26.25 | 50                              | 4.0                     | 110                               | 1.0                               | 0.5                             | 19.0 | 4.3                                                 | 0.55                                                      | 190                                          |
| CZ5361B | 25.65                                             | 27  | 28.35 | 50                              | 5.0                     | 120                               | 1.0                               | 0.5                             | 20.6 | 4.1                                                 | 0.60                                                      | 176                                          |
| CZ5362B | 26.60                                             | 28  | 29.40 | 50                              | 6.0                     | 130                               | 1.0                               | 0.5                             | 21.2 | 3.9                                                 | 0.60                                                      | 170                                          |
| CZ5363B | 28.50                                             | 30  | 31.50 | 40                              | 8.0                     | 140                               | 1.0                               | 0.5                             | 22.8 | 3.7                                                 | 0.60                                                      | 158                                          |
| CZ5364B | 31.35                                             | 33  | 34.65 | 40                              | 10                      | 150                               | 1.0                               | 0.5                             | 25.1 | 3.5                                                 | 0.65                                                      | 144                                          |
| CZ5365B | 34.20                                             | 36  | 37.80 | 30                              | 11                      | 160                               | 1.0                               | 0.5                             | 27.4 | 3.3                                                 | 0.65                                                      | 132                                          |
| CZ5366B | 37.05                                             | 39  | 40.95 | 30                              | 14                      | 170                               | 1.0                               | 0.5                             | 29.7 | 3.1                                                 | 0.65                                                      | 122                                          |
| CZ5367B | 40.85                                             | 43  | 45.15 | 30                              | 20                      | 190                               | 1.0                               | 0.5                             | 32.7 | 2.8                                                 | 0.70                                                      | 110                                          |
| CZ5368B | 44.65                                             | 47  | 49.35 | 25                              | 25                      | 210                               | 1.0                               | 0.5                             | 35.8 | 2.7                                                 | 0.80                                                      | 100                                          |
| CZ5369B | 48.45                                             | 51  | 53.55 | 25                              | 27                      | 230                               | 1.0                               | 0.5                             | 38.8 | 2.5                                                 | 0.90                                                      | 93.0                                         |
| CZ5370B | 53.20                                             | 56  | 58.80 | 20                              | 35                      | 280                               | 1.0                               | 0.5                             | 42.6 | 2.3                                                 | 1.00                                                      | 86.0                                         |
| CZ5371B | 57.00                                             | 60  | 63.00 | 20                              | 40                      | 350                               | 1.0                               | 0.5                             | 45.5 | 2.2                                                 | 1.20                                                      | 79.0                                         |
| CZ5372B | 58.90                                             | 62  | 65.10 | 20                              | 42                      | 400                               | 1.0                               | 0.5                             | 47.1 | 2.1                                                 | 1.35                                                      | 76.0                                         |
| CZ5373B | 64.60                                             | 68  | 71.40 | 20                              | 44                      | 500                               | 1.0                               | 0.5                             | 51.7 | 2.0                                                 | 1.50                                                      | 70.0                                         |
| CZ5374B | 71.25                                             | 75  | 78.75 | 20                              | 45                      | 620                               | 1.0                               | 0.5                             | 56.0 | 1.9                                                 | 1.60                                                      | 63.0                                         |
| CZ5375B | 77.90                                             | 82  | 86.10 | 15                              | 65                      | 720                               | 1.0                               | 0.5                             | 62.2 | 1.8                                                 | 1.80                                                      | 58.0                                         |
| CZ5376B | 82.65                                             | 87  | 91.35 | 15                              | 75                      | 760                               | 1.0                               | 0.5                             | 66.0 | 1.7                                                 | 2.00                                                      | 54.5                                         |
| CZ5377B | 86.45                                             | 91  | 95.55 | 15                              | 75                      | 760                               | 1.0                               | 0.5                             | 69.2 | 1.6                                                 | 2.20                                                      | 52.5                                         |
| CZ5378B | 95.00                                             | 100 | 105.0 | 12                              | 90                      | 800                               | 1.0                               | 0.5                             | 76.0 | 1.5                                                 | 2.50                                                      | 47.5                                         |
| CZ5379B | 104.5                                             | 110 | 115.5 | 12                              | 125                     | 1000                              | 1.0                               | 0.5                             | 83.6 | 1.4                                                 | 2.50                                                      | 43.0                                         |
| CZ5380B | 114.0                                             | 120 | 126.0 | 10                              | 170                     | 1150                              | 1.0                               | 0.5                             | 91.2 | 1.3                                                 | 2.50                                                      | 39.5                                         |
| CZ5381B | 123.5                                             | 130 | 136.5 | 10                              | 190                     | 1250                              | 1.0                               | 0.5                             | 98.8 | 1.2                                                 | 2.50                                                      | 36.6                                         |
| CZ5382B | 133.0                                             | 140 | 147.0 | 8.0                             | 230                     | 1500                              | 1.0                               | 0.5                             | 106  | 1.2                                                 | 2.50                                                      | 34.0                                         |
| CZ5383B | 142.5                                             | 150 | 157.5 | 8.0                             | 330                     | 1500                              | 1.0                               | 0.5                             | 114  | 1.1                                                 | 3.00                                                      | 31.6                                         |
| CZ5384B | 152.0                                             | 160 | 168.0 | 8.0                             | 350                     | 1650                              | 1.0                               | 0.5                             | 122  | 1.1                                                 | 3.00                                                      | 29.4                                         |
| CZ5385B | 161.5                                             | 170 | 178.5 | 8.0                             | 380                     | 1750                              | 1.0                               | 0.5                             | 129  | 1.0                                                 | 3.00                                                      | 28.0                                         |
| CZ5386B | 171.0                                             | 180 | 189.0 | 5.0                             | 430                     | 1750                              | 1.0                               | 0.5                             | 137  | 1.0                                                 | 4.00                                                      | 26.4                                         |
| CZ5387B | 180.5                                             | 190 | 199.5 | 5.0                             | 450                     | 1850                              | 1.0                               | 0.5                             | 144  | 0.9                                                 | 5.00                                                      | 25.0                                         |
| CZ5388B | 190.0                                             | 200 | 210.0 | 5.0                             | 480                     | 1850                              | 1.0                               | 0.5                             | 152  | 0.9                                                 | 5.00                                                      | 23.6                                         |

Notes: (1) Mounted on 8.0mm<sup>2</sup> copper pads to each terminal. Measure at zero lead length. Derate above 75°C.

(2) Surge current ( $i_r$ ) - Maximum allowable peak, non-recurrent square wave current (PW=8.3ms).

(3) Voltage regulation ( $\Delta V_Z$ ) -  $V_Z$  measurements are made at 10% and then at 50% of the  $I_{ZT}$  MAX value listed in the electrical characteristics table. The test current time duration for each  $V_Z$  measurement is 380 $\mu\text{s}$  ( $T_A=25^\circ\text{C}$ ).

#### DO-201 CASE - MECHANICAL OUTLINE



| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | INCHES |       | MILLIMETERS |      |
|            | MIN    | MAX   | MIN         | MAX  |
| A          | 1.000  | -     | 25.40       | -    |
| B          | 0.285  | 0.375 | 7.24        | 9.53 |
| C          | 0.188  | 0.210 | 4.78        | 5.33 |
| D          | 0.037  | 0.042 | 0.94        | 1.07 |

DO-201(REV: R1)

MARKING: FULL PART NUMBER

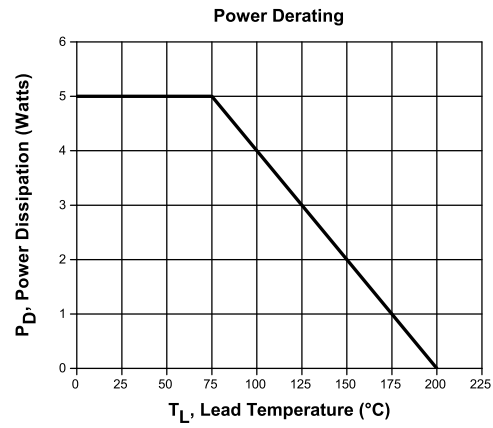
R9 (15-December 2016)

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3.3 THRU 200 VOLT  
5W, 5% TOLERANCE



## TYPICAL ELECTRICAL CHARACTERISTICS



R9 (15-December 2016)



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### CONTACT US

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