

CZ5333B THRU CZ5388B

**5.0W SILICON ZENER DIODE
3.3 VOLTS THRU 200 VOLTS
5% TOLERANCE**



DO-201 CASE

**Central™
Semiconductor Corp.**

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZ5333B Series Silicon Zener Diode is a high quality voltage regulator designed for use in industrial, commercial, entertainment and computer applications.

MARKING CODE: FULL PART NUMBER

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$)

Power Dissipation

Operating and Storage Temperature

SYMBOL

P_D

T_J, T_{stg}

5.0

-65 to +200

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 $V_Z @ I_{ZT}$ | | | TEST CURRENT | MAXIMUM ZENER IMPEDANCE | | | MAXIMUM REVERSE CURRENT | | MAX SURGE CURRENT (NOTE 1) | MAX VOLTAGE REGULATION (NOTE 2) | MAX REGULATOR CURRENT |
|---------|---------------------------------|-----|-------|--------------|-------------------------|-------------------|---------------|-------------------------|--------------|----------------------------|---------------------------------|-----------------------|
| | MIN | NOM | MAX | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZT} @ I_{ZK}$ | $I_R @ V_R$ | i_r | ΔV_Z | I_{ZM} | | |
| | V | V | V | mA | Ω | Ω | μA | V | V | mA | | |
| CZ5333B | 3.135 | 3.3 | 3.465 | 380 | 3.0 | 400 | 1.0 | 300 | 1.0 | 20 | 0.85 | 1440 |
| 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 |
| CZ5360B | 23.75 | 25 | 26.25 | 50 | 4.0 | 110 | 1.0 | 0.5 | 19.0 | 4.3 | 0.55 | 190 |

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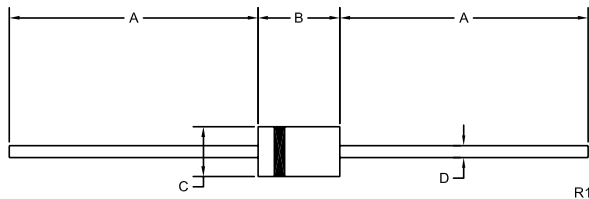
ELECTRICAL CHARACTERISTICS: ($T_A=25^{\circ}\text{C}$) $V_F=1.2\text{V MAX @ } I_F=1.0\text{A}$ FOR ALL TYPES.

| TYPE | ZENER VOLTAGE $V_Z @ I_ZT$ | | | TEST CURRENT | MAXIMUM ZENER IMPEDANCE | | | MAXIMUM REVERSE CURRENT | | MAX SURGE CURRENT (NOTE 1) | MAX VOLTAGE REGULATION (NOTE 2) | MAX REGULATOR CURRENT |
|---------|-------------------------------|-----|-------|--------------|-------------------------|-------------------|-----|-------------------------|------|-------------------------------|------------------------------------|-----------------------|
| | MIN | NOM | MAX | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZT} @ I_{ZK}$ | | $I_R @ V_R$ | | i_r | ΔV_Z | I_{ZM} |
| | V | V | V | mA | Ω | Ω | mA | μA | V | A | V | mA |
| 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 |

Note 1. Surge Current (i_r) - Maximum allowable peak, non recurrent square wave current (PW=8.3ms).

Note 2. Voltage Regulation (ΔV_Z) - V_Z Measurements are made at 10% and then at 50% of the I_Z max value listed in the electrical characteristics table. The test current time duration for each V_Z measurement is 380us ($T_A=25^{\circ}\text{C}$)

DO-201 CASE - MECHANICAL OUTLINE



| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | 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)

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