

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

1N5333B THRU 1N5388B

5.0 W ZENER DIODE
3.3 VOLTS to 200 VOLTS
5% TOLERANCE

AXIAL LEAD EPOXY CASE

DESCRIPTION

The Central Semiconductor 1N5333B Series Silicon Zener Diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications.

ABSOLUTE MAXIMUM RATINGS

Power Dissipation (@ $T_L = 75^\circ\text{C}$)
Operating and Storage Temperature
Tolerance "B Suffix"

SYMBOL

P_D 5.0
 T_J, T_{STG} -65 to +200
 ± 5

UNIT

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 | Test Current | Maximum Zener Impedance | | | Maximum Reverse Current | | Maximum Surge Current (Note 1) | Maximum Voltage Regulation (Note 2) | Maximum Regulator Current |
|---------|----------------|--------------|-------------------------|-------------------|-----|-------------------------|-------|--------------------------------|-------------------------------------|---------------------------|
| | $V_Z @ I_{ZT}$ | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | | $I_R @ V_R$ | | I_r | ΔV_Z | I_{ZM} |
| | Volts | mA | Ω | Ω | mA | μA | Volts | A | Volts | mA |
| 1N5333B | 3.3 | 380 | 3.0 | 400 | 1.0 | 300 | 1.0 | 20 | 0.85 | 1440 |
| 1N5334B | 3.6 | 350 | 2.5 | 500 | 1.0 | 150 | 1.0 | 18.7 | 0.80 | 1320 |
| 1N5335B | 3.9 | 320 | 2.0 | 500 | 1.0 | 50 | 1.0 | 17.6 | 0.54 | 1220 |
| 1N5336B | 4.3 | 290 | 2.0 | 500 | 1.0 | 10 | 1.0 | 16.4 | 0.49 | 1100 |
| 1N5337B | 4.7 | 260 | 2.0 | 450 | 1.0 | 5.0 | 1.0 | 15.3 | 0.44 | 1010 |
| 1N5338B | 5.1 | 240 | 1.5 | 400 | 1.0 | 1.0 | 1.0 | 14.4 | 0.39 | 930 |
| 1N5339B | 5.6 | 220 | 1.0 | 400 | 1.0 | 1.0 | 2.0 | 13.4 | 0.25 | 865 |
| 1N5340B | 6.0 | 200 | 1.0 | 300 | 1.0 | 1.0 | 3.0 | 12.7 | 0.19 | 790 |
| 1N5341B | 6.2 | 200 | 1.0 | 200 | 1.0 | 1.0 | 3.0 | 12.4 | 0.10 | 765 |
| 1N5342B | 6.8 | 175 | 1.0 | 200 | 1.0 | 10 | 5.2 | 11.5 | 0.15 | 700 |
| 1N5343B | 7.5 | 175 | 1.5 | 200 | 1.0 | 10 | 5.7 | 10.7 | 0.15 | 630 |
| 1N5344B | 8.2 | 150 | 1.5 | 200 | 1.0 | 10 | 6.2 | 10.0 | 0.20 | 580 |
| 1N5345B | 8.7 | 150 | 2.0 | 200 | 1.0 | 10 | 6.6 | 9.5 | 0.20 | 545 |
| 1N5346B | 9.1 | 150 | 2.0 | 150 | 1.0 | 7.5 | 6.9 | 9.2 | 0.22 | 520 |
| 1N5347B | 10 | 125 | 2.0 | 125 | 1.0 | 5.0 | 7.6 | 8.6 | 0.22 | 475 |
| 1N5348B | 11 | 125 | 2.5 | 125 | 1.0 | 5.0 | 8.4 | 8.0 | 0.25 | 430 |
| 1N5349B | 12 | 100 | 2.5 | 125 | 1.0 | 2.0 | 9.1 | 7.5 | 0.25 | 395 |
| 1N5350B | 13 | 100 | 2.5 | 100 | 1.0 | 1.0 | 9.9 | 7.0 | 0.25 | 365 |
| 1N5351B | 14 | 100 | 2.5 | 75 | 1.0 | 1.0 | 10.6 | 6.7 | 0.25 | 340 |
| 1N5352B | 15 | 75 | 2.5 | 75 | 1.0 | 1.0 | 11.5 | 6.3 | 0.25 | 315 |
| 1N5353B | 16 | 75 | 2.5 | 75 | 1.0 | 1.0 | 12.2 | 6.0 | 0.30 | 295 |
| 1N5354B | 17 | 70 | 2.5 | 75 | 1.0 | 0.5 | 12.9 | 5.8 | 0.35 | 280 |
| 1N5355B | 18 | 65 | 2.5 | 75 | 1.0 | 0.5 | 13.7 | 5.5 | 0.40 | 264 |
| 1N5356B | 19 | 65 | 3.0 | 75 | 1.0 | 0.5 | 14.4 | 5.3 | 0.40 | 250 |
| 1N5357B | 20 | 65 | 3.0 | 75 | 1.0 | 0.5 | 15.2 | 5.1 | 0.40 | 237 |
| 1N5358B | 22 | 50 | 3.5 | 75 | 1.0 | 0.5 | 16.7 | 4.7 | 0.45 | 216 |
| 1N5359B | 24 | 50 | 3.5 | 100 | 1.0 | 0.5 | 18.2 | 4.4 | 0.55 | 198 |
| 1N5360B | 25 | 50 | 4.0 | 110 | 1.0 | 0.5 | 19.0 | 4.3 | 0.55 | 190 |
| 1N5361B | 27 | 50 | 5.0 | 120 | 1.0 | 0.5 | 20.6 | 4.1 | 0.60 | 176 |
| 1N5362B | 28 | 50 | 6.0 | 130 | 1.0 | 0.5 | 21.2 | 3.9 | 0.60 | 170 |
| 1N5363B | 30 | 40 | 8.0 | 140 | 1.0 | 0.5 | 22.8 | 3.7 | 0.60 | 158 |

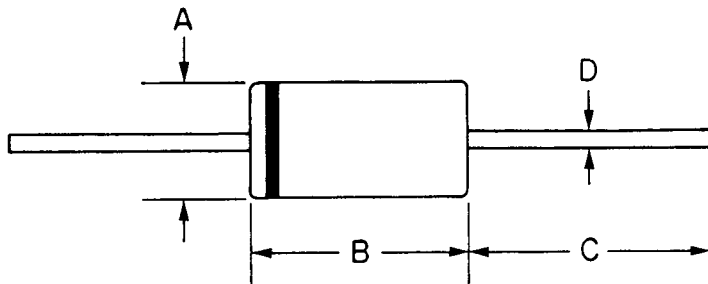
See reverse for notes and outline drawing.

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 | Test Current | Maximum Zener Impedance | | | Maximum Reverse Current | | Maximum Surge Current (Note 1) | Maximum Voltage Regulation (Note 2) | Maximum Regulator Current |
|---------|----------------|--------------|-------------------------|-------------------|-----|-------------------------|-------|--------------------------------|-------------------------------------|---------------------------|
| | $V_Z @ I_{ZT}$ | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | | $I_R @ V_R$ | | i_r | ΔV_Z | I_{ZM} |
| | Volts | mA | Ω | Ω | mA | μA | Volts | A | Volts | mA |
| 1N5364B | 33 | 40 | 10 | 150 | 1.0 | 0.5 | 25.1 | 3.5 | 0.65 | 144 |
| 1N5365B | 36 | 30 | 11 | 160 | 1.0 | 0.5 | 27.4 | 3.3 | 0.65 | 132 |
| 1N5366B | 39 | 30 | 14 | 170 | 1.0 | 0.5 | 29.7 | 3.1 | 0.65 | 122 |
| 1N5367B | 43 | 30 | 20 | 190 | 1.0 | 0.5 | 32.7 | 2.8 | 0.70 | 110 |
| 1N5368B | 47 | 25 | 25 | 210 | 1.0 | 0.5 | 35.8 | 2.7 | 0.80 | 100 |
| 1N5369B | 51 | 25 | 27 | 230 | 1.0 | 0.5 | 38.8 | 2.5 | 0.90 | 93.0 |
| 1N5370B | 56 | 20 | 35 | 280 | 1.0 | 0.5 | 42.6 | 2.3 | 1.00 | 86.0 |
| 1N5371B | 60 | 20 | 40 | 350 | 1.0 | 0.5 | 45.5 | 2.2 | 1.20 | 79.0 |
| 1N5372B | 62 | 20 | 42 | 400 | 1.0 | 0.5 | 47.1 | 2.1 | 1.35 | 76.0 |
| 1N5373B | 68 | 20 | 44 | 500 | 1.0 | 0.5 | 51.7 | 2.0 | 1.50 | 70.0 |
| 1N5374B | 75 | 20 | 45 | 620 | 1.0 | 0.5 | 56.0 | 1.9 | 1.60 | 63.0 |
| 1N5375B | 82 | 15 | 65 | 720 | 1.0 | 0.5 | 62.2 | 1.8 | 1.80 | 58.0 |
| 1N5376B | 87 | 15 | 75 | 760 | 1.0 | 0.5 | 66.0 | 1.7 | 2.00 | 54.5 |
| 1N5377B | 91 | 15 | 75 | 760 | 1.0 | 0.5 | 69.2 | 1.6 | 2.20 | 52.5 |
| 1N5378B | 100 | 12 | 90 | 800 | 1.0 | 0.5 | 76.0 | 1.5 | 2.50 | 47.5 |
| 1N5379B | 110 | 12 | 125 | 1000 | 1.0 | 0.5 | 83.6 | 1.4 | 2.50 | 43.0 |
| 1N5380B | 120 | 10 | 170 | 1150 | 1.0 | 0.5 | 91.2 | 1.3 | 2.50 | 39.5 |
| 1N5381B | 130 | 10 | 190 | 1250 | 1.0 | 0.5 | 98.8 | 1.2 | 2.50 | 36.6 |
| 1N5382B | 140 | 8.0 | 230 | 1500 | 1.0 | 0.5 | 106 | 1.2 | 2.50 | 34.0 |
| 1N5383B | 150 | 8.0 | 330 | 1500 | 1.0 | 0.5 | 114 | 1.1 | 3.00 | 31.6 |
| 1N5384B | 160 | 8.0 | 350 | 1650 | 1.0 | 0.5 | 122 | 1.1 | 3.00 | 29.4 |
| 1N5385B | 170 | 8.0 | 380 | 1750 | 1.0 | 0.5 | 129 | 1.0 | 3.00 | 28.0 |
| 1N5386B | 180 | 5.0 | 430 | 1750 | 1.0 | 0.5 | 137 | 1.0 | 4.00 | 26.4 |
| 1N5387B | 190 | 5.0 | 450 | 1850 | 1.0 | 0.5 | 144 | 0.9 | 5.00 | 25.0 |
| 1N5388B | 200 | 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 ($PW=8.3\text{ms}$)

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 $40 \pm 10\text{ ms}$. ($T_A = 25^\circ\text{C}$)



| | INCHES | MILLIMETERS |
|-----|-----------|-------------|
| DIM | | |
| A | 0.145 MAX | 3.68 MAX |
| B | 0.350 MAX | 8.89 MAX |
| C | 1.0 MIN | 25.4 MIN |
| D | 0.043 MAX | 1.09 MAX |

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