

1N5913B THRU 1N5956B

SILICON ZENER DIODE  
1.5 WATT, 3.3 THRU 200 VOLTS



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#### DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1N5913B series silicon Zener diode is a high quality voltage regulator designed for use in automotive, industrial, commercial, entertainment and computer applications.

#### MARKING: FULL PART NUMBER

#### MAXIMUM RATINGS:

Power Dissipation ( $T_L=75^\circ\text{C}$ )

Operating and Storage 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

$P_D$

$T_J, T_{stg}$

1.5

-65 to +200

$\pm 5$

$\pm 2$

$\pm 1$

#### UNITS

W

$^\circ\text{C}$

%

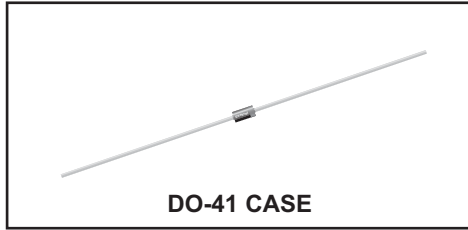
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**ELECTRICAL CHARACTERISTICS:** ( $T_L=30^\circ\text{C}$ )  $V_F=1.5\text{V MAX @ } I_F=200\text{mA}$  (for all types)

| TYPE    | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$ |     |       | TEST CURRENT | MAXIMUM ZENER IMPEDANCE |                   |      | MAXIMUM REVERSE CURRENT |      | MAXIMUM DC CURRENT |
|---------|---------------------------------|-----|-------|--------------|-------------------------|-------------------|------|-------------------------|------|--------------------|
|         | MIN                             | NOM | MAX   | $I_{ZT}$     | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ |      | $I_R @ V_R$             |      | $I_{ZM}$           |
|         | V                               | V   | V     | mA           | $\Omega$                | $\Omega$          | mA   | $\mu\text{A}$           | V    | mA                 |
| 1N5913B | 3.135                           | 3.3 | 3.465 | 113.6        | 10                      | 500               | 1.0  | 100                     | 1.0  | 454                |
| 1N5914B | 3.420                           | 3.6 | 3.780 | 104.2        | 9.0                     | 500               | 1.0  | 75                      | 1.0  | 416                |
| 1N5915B | 3.705                           | 3.9 | 4.095 | 96.1         | 7.5                     | 500               | 1.0  | 25                      | 1.0  | 384                |
| 1N5916B | 4.085                           | 4.3 | 4.515 | 87.2         | 6.0                     | 500               | 1.0  | 5.0                     | 1.0  | 348                |
| 1N5917B | 4.465                           | 4.7 | 4.935 | 79.8         | 5.0                     | 500               | 1.0  | 5.0                     | 1.5  | 319                |
| 1N5918B | 4.845                           | 5.1 | 5.355 | 73.5         | 4.0                     | 350               | 1.0  | 5.0                     | 2.0  | 294                |
| 1N5919B | 5.320                           | 5.6 | 5.880 | 66.9         | 2.0                     | 250               | 1.0  | 5.0                     | 3.0  | 267                |
| 1N5920B | 5.890                           | 6.2 | 6.510 | 60.5         | 2.0                     | 200               | 1.0  | 5.0                     | 4.0  | 241                |
| 1N5921B | 6.460                           | 6.8 | 7.140 | 55.1         | 3.0                     | 200               | 1.0  | 5.0                     | 5.2  | 220                |
| 1N5922B | 7.130                           | 7.5 | 7.880 | 50           | 3.0                     | 400               | 0.5  | 5.0                     | 6.0  | 200                |
| 1N5923B | 7.790                           | 8.2 | 8.610 | 45.7         | 4.0                     | 400               | 0.5  | 5.0                     | 6.5  | 182                |
| 1N5924B | 8.650                           | 9.1 | 9.560 | 41.2         | 4.0                     | 500               | 0.5  | 5.0                     | 7.0  | 164                |
| 1N5925B | 9.500                           | 10  | 10.50 | 37.5         | 5.0                     | 500               | 0.25 | 5.0                     | 8.0  | 150                |
| 1N5926B | 10.45                           | 11  | 11.55 | 34.1         | 6.0                     | 550               | 0.25 | 1.0                     | 8.4  | 136                |
| 1N5927B | 11.40                           | 12  | 12.60 | 31.2         | 7.0                     | 550               | 0.25 | 1.0                     | 9.1  | 125                |
| 1N5928B | 12.35                           | 13  | 13.65 | 28.8         | 7.0                     | 550               | 0.25 | 1.0                     | 9.9  | 115                |
| 1N5929B | 14.25                           | 15  | 15.75 | 25           | 9.0                     | 600               | 0.25 | 1.0                     | 11.4 | 100                |
| 1N5930B | 15.20                           | 16  | 16.80 | 23.4         | 10                      | 600               | 0.25 | 1.0                     | 12.2 | 93                 |
| 1N5931B | 17.10                           | 18  | 18.90 | 20.8         | 12                      | 650               | 0.25 | 1.0                     | 13.7 | 83                 |
| 1N5932B | 19.00                           | 20  | 21.00 | 18.7         | 14                      | 650               | 0.25 | 1.0                     | 15.2 | 75                 |
| 1N5933B | 20.90                           | 22  | 23.10 | 17           | 18                      | 650               | 0.25 | 1.0                     | 16.7 | 68                 |

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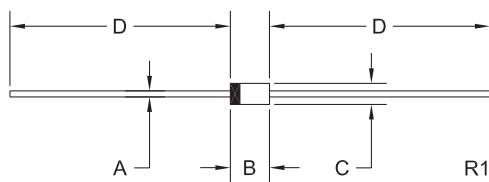
**SILICON ZENER DIODE  
1.5 WATT, 3.3 THRU 200 VOLTS**



**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_L=30^\circ\text{C}$ )  $V_F=1.5\text{V MAX @ } I_F=200\text{mA}$  (for all types)

| TYPE    | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$ |     |       | TEST CURRENT | MAXIMUM ZENER IMPEDANCE |                   |      | MAXIMUM REVERSE CURRENT |       | MAXIMUM DC CURRENT |
|---------|---------------------------------|-----|-------|--------------|-------------------------|-------------------|------|-------------------------|-------|--------------------|
|         | MIN                             | NOM | MAX   | $I_{ZT}$     | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ |      | $I_R @ V_R$             |       |                    |
|         | V                               | V   | V     | mA           | $\Omega$                | $\Omega$          | mA   | $\mu\text{A}$           | V     | mA                 |
| 1N5934B | 22.80                           | 24  | 25.20 | 15.6         | 19                      | 700               | 0.25 | 1.0                     | 18.2  | 62                 |
| 1N5935B | 25.65                           | 27  | 28.35 | 13.9         | 23                      | 700               | 0.25 | 1.0                     | 20.6  | 55                 |
| 1N5936B | 28.50                           | 30  | 31.50 | 12.5         | 26                      | 750               | 0.25 | 1.0                     | 22.8  | 50                 |
| 1N5937B | 31.35                           | 33  | 34.65 | 11.4         | 33                      | 800               | 0.25 | 1.0                     | 25.1  | 45                 |
| 1N5938B | 34.20                           | 36  | 37.80 | 10.4         | 38                      | 850               | 0.25 | 1.0                     | 27.4  | 41                 |
| 1N5939B | 37.05                           | 39  | 40.95 | 9.6          | 45                      | 900               | 0.25 | 1.0                     | 29.7  | 38                 |
| 1N5940B | 40.85                           | 43  | 45.15 | 8.7          | 53                      | 950               | 0.25 | 1.0                     | 32.7  | 34                 |
| 1N5941B | 44.65                           | 47  | 49.35 | 8.0          | 67                      | 1000              | 0.25 | 1.0                     | 35.8  | 31                 |
| 1N5942B | 48.45                           | 51  | 53.55 | 7.3          | 70                      | 1100              | 0.25 | 1.0                     | 38.8  | 29                 |
| 1N5943B | 53.20                           | 56  | 58.80 | 6.7          | 86                      | 1300              | 0.25 | 1.0                     | 42.6  | 26                 |
| 1N5944B | 58.90                           | 62  | 65.10 | 6.0          | 100                     | 1500              | 0.25 | 1.0                     | 47.1  | 24                 |
| 1N5945B | 64.60                           | 68  | 71.40 | 5.5          | 120                     | 1700              | 0.25 | 1.0                     | 51.2  | 22                 |
| 1N5946B | 71.25                           | 75  | 78.75 | 5.0          | 140                     | 2000              | 0.25 | 1.0                     | 56.0  | 20                 |
| 1N5947B | 77.90                           | 82  | 86.10 | 4.6          | 160                     | 2500              | 0.25 | 1.0                     | 62.2  | 18                 |
| 1N5948B | 86.45                           | 91  | 95.55 | 4.1          | 200                     | 3000              | 0.25 | 1.0                     | 69.2  | 16                 |
| 1N5949B | 95.00                           | 100 | 105.0 | 3.7          | 250                     | 3100              | 0.25 | 1.0                     | 76.0  | 15                 |
| 1N5950B | 104.5                           | 110 | 115.5 | 3.4          | 300                     | 4000              | 0.25 | 1.0                     | 83.6  | 13                 |
| 1N5951B | 114.0                           | 120 | 126.0 | 3.1          | 380                     | 4500              | 0.25 | 1.0                     | 91.2  | 12                 |
| 1N5952B | 123.5                           | 130 | 136.5 | 2.9          | 450                     | 5000              | 0.25 | 1.0                     | 98.8  | 11                 |
| 1N5953B | 142.5                           | 150 | 157.5 | 2.5          | 600                     | 6000              | 0.25 | 1.0                     | 114.0 | 10                 |
| 1N5954B | 152.0                           | 160 | 168.0 | 2.3          | 700                     | 6500              | 0.25 | 1.0                     | 121.6 | 9.0                |
| 1N5955B | 171.0                           | 180 | 189.0 | 2.1          | 900                     | 7000              | 0.25 | 1.0                     | 136.8 | 8.0                |
| 1N5956B | 190.0                           | 200 | 210.0 | 1.9          | 1200                    | 8000              | 0.25 | 1.0                     | 152.0 | 7.0                |

**DO-41 CASE - MECHANICAL OUTLINE**



| SYMBOL | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | MIN    | MAX   | MIN         | MAX  |
| A      | 0.028  | 0.034 | 0.71        | 0.86 |
| B      | 0.160  | 0.205 | 4.06        | 5.21 |
| C      | 0.080  | 0.107 | 2.03        | 2.72 |
| D      | 1.000  | -     | 25.40       | -    |

DO-41 (REV: R1)

R3 (8-March 2012)

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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

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- 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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