

1N5221B THRU 1N5278B

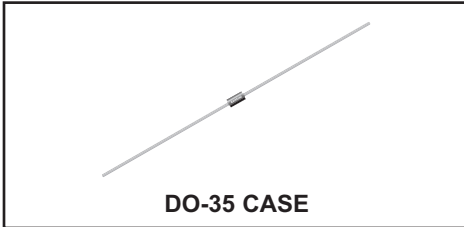
SILICON ZENER DIODES
500mW, 2.4 THRU 170 VOLT
5% TOLERANCE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1N5221B series silicon Zener diodes are highly reliable voltage regulators designed for use in industrial, commercial, entertainment and computer applications.



DO-35 CASE

MAXIMUM RATINGS: ($T_L=75^\circ\text{C}$)

Power Dissipation

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 | 500 |
| T_J, T_{stg} | -65 to +200 |
| | ± 5 |
| | ± 2 |
| | ± 1 |

UNITS

| |
|------------------|
| mW |
| $^\circ\text{C}$ |
| % |
| % |
| % |

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$) $V_F=1.1\text{V MAX @ } I_F=200\text{mA}$ (for all types)

| TYPE | ZENER VOLTAGE $V_Z @ I_{ZT}$ | | | TEST CURRENT | MAXIMUM ZENER IMPEDANCE | | | MAXIMUM REVERSE CURRENT | | MAXIMUM TEMPERATURE COEFFICIENT |
|---------|---------------------------------|-----|-------|--------------|-------------------------|-------------------|-------------------|-------------------------|-----------------------|---------------------------------|
| | MIN | NOM | MAX | | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | $I_R @ V_R$ | | |
| | V | V | V | mA | Ω | Ω | μA | V | $\% / ^\circ\text{C}$ | |
| 1N5221B | 2.280 | 2.4 | 2.520 | 20 | 30 | 1200 | 0.25 | 100 | 1.0 | -0.085 |
| 1N5222B | 2.375 | 2.5 | 2.625 | 20 | 30 | 1250 | 0.25 | 100 | 1.0 | -0.085 |
| 1N5223B | 2.565 | 2.7 | 2.835 | 20 | 30 | 1300 | 0.25 | 75 | 1.0 | -0.080 |
| 1N5224B | 2.660 | 2.8 | 2.940 | 20 | 30 | 1400 | 0.25 | 75 | 1.0 | -0.080 |
| 1N5225B | 2.850 | 3.0 | 3.150 | 20 | 29 | 1600 | 0.25 | 50 | 1.0 | -0.075 |
| 1N5226B | 3.135 | 3.3 | 3.465 | 20 | 28 | 1600 | 0.25 | 25 | 1.0 | -0.070 |
| 1N5227B | 3.420 | 3.6 | 3.780 | 20 | 24 | 1700 | 0.25 | 15 | 1.0 | -0.065 |
| 1N5228B | 3.705 | 3.9 | 4.095 | 20 | 23 | 1900 | 0.25 | 10 | 1.0 | -0.060 |
| 1N5229B | 4.085 | 4.3 | 4.515 | 20 | 22 | 2000 | 0.25 | 5.0 | 1.0 | ± 0.055 |
| 1N5230B | 4.465 | 4.7 | 4.935 | 20 | 19 | 1900 | 0.25 | 5.0 | 2.0 | ± 0.030 |
| 1N5231B | 4.845 | 5.1 | 5.355 | 20 | 17 | 1600 | 0.25 | 5.0 | 2.0 | ± 0.030 |
| 1N5232B | 5.320 | 5.6 | 5.880 | 20 | 11 | 1600 | 0.25 | 5.0 | 3.0 | +0.038 |
| 1N5233B | 5.700 | 6.0 | 6.300 | 20 | 7.0 | 1600 | 0.25 | 5.0 | 3.5 | +0.038 |
| 1N5234B | 5.890 | 6.2 | 6.510 | 20 | 7.0 | 1000 | 0.25 | 5.0 | 4.0 | +0.045 |
| 1N5235B | 6.460 | 6.8 | 7.140 | 20 | 5.0 | 750 | 0.25 | 3.0 | 5.0 | +0.050 |
| 1N5236B | 7.125 | 7.5 | 7.875 | 20 | 6.0 | 500 | 0.25 | 3.0 | 6.0 | +0.058 |
| 1N5237B | 7.790 | 8.2 | 8.610 | 20 | 8.0 | 500 | 0.25 | 3.0 | 6.5 | +0.062 |
| 1N5238B | 8.265 | 8.7 | 9.135 | 20 | 8.0 | 600 | 0.25 | 3.0 | 6.5 | +0.065 |
| 1N5239B | 8.645 | 9.1 | 9.555 | 20 | 10 | 600 | 0.25 | 3.0 | 7.0 | +0.068 |
| 1N5240B | 9.500 | 10 | 10.50 | 20 | 17 | 600 | 0.25 | 3.0 | 8.0 | +0.075 |
| 1N5241B | 10.45 | 11 | 11.55 | 20 | 22 | 600 | 0.25 | 2.0 | 8.4 | +0.076 |
| 1N5242B | 11.40 | 12 | 12.60 | 20 | 30 | 600 | 0.25 | 1.0 | 9.1 | +0.077 |
| 1N5243B | 12.35 | 13 | 13.65 | 9.5 | 13 | 600 | 0.25 | 0.5 | 9.9 | +0.079 |
| 1N5244B | 13.30 | 14 | 14.70 | 9.0 | 15 | 600 | 0.25 | 0.1 | 10 | +0.082 |
| 1N5245B | 14.25 | 15 | 15.75 | 8.5 | 16 | 600 | 0.25 | 0.1 | 11 | +0.082 |
| 1N5246B | 15.20 | 16 | 16.80 | 7.8 | 17 | 600 | 0.25 | 0.1 | 12 | +0.083 |

R3 (11-September 2013)

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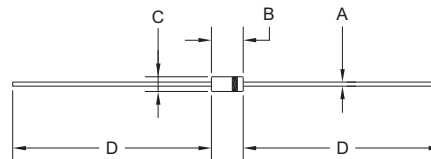
ELECTRICAL CHARACTERISTICS - Continued: (T_A=25°C) V_F=1.1V MAX @ I_F=200mA (for all types)

| TYPE | ZENER VOLTAGE V _Z @ I _{ZT} | | | TEST CURRENT | MAXIMUM ZENER IMPEDANCE | | | MAXIMUM REVERSE CURRENT | | MAXIMUM TEMPERATURE COEFFICIENT |
|---------|---|-----|-------|-----------------|-----------------------------------|-----------------------------------|---------------------------------|-------------------------|------|---------------------------------|
| | MIN | NOM | MAX | I _{ZT} | Z _{ZT} @ I _{ZT} | Z _{ZK} @ I _{ZK} | I _R @ V _R | | | ∅V _Z |
| | V | V | V | mA | Ω | Ω | μA | V | %/°C | |
| 1N5247B | 16.15 | 17 | 17.85 | 7.4 | 19 | 600 | 0.25 | 0.1 | 13 | +0.084 |
| 1N5248B | 17.10 | 18 | 18.90 | 7.0 | 21 | 600 | 0.25 | 0.1 | 14 | +0.085 |
| 1N5249B | 18.05 | 19 | 19.95 | 6.6 | 23 | 600 | 0.25 | 0.1 | 14 | +0.086 |
| 1N5250B | 19.00 | 20 | 21.00 | 6.2 | 25 | 600 | 0.25 | 0.1 | 15 | +0.086 |
| 1N5251B | 20.90 | 22 | 23.10 | 5.6 | 29 | 600 | 0.25 | 0.1 | 17 | +0.087 |
| 1N5252B | 22.80 | 24 | 25.20 | 5.2 | 33 | 600 | 0.25 | 0.1 | 18 | +0.088 |
| 1N5253B | 23.75 | 25 | 26.25 | 5.0 | 35 | 600 | 0.25 | 0.1 | 19 | +0.089 |
| 1N5254B | 25.65 | 27 | 28.35 | 4.6 | 41 | 600 | 0.25 | 0.1 | 21 | +0.090 |
| 1N5255B | 26.60 | 28 | 29.40 | 4.5 | 44 | 600 | 0.25 | 0.1 | 21 | +0.091 |
| 1N5256B | 28.50 | 30 | 31.50 | 4.2 | 49 | 600 | 0.25 | 0.1 | 23 | +0.091 |
| 1N5257B | 31.35 | 33 | 34.65 | 3.8 | 58 | 700 | 0.25 | 0.1 | 25 | +0.092 |
| 1N5258B | 34.20 | 36 | 37.80 | 3.4 | 70 | 700 | 0.25 | 0.1 | 27 | +0.093 |
| 1N5259B | 37.05 | 39 | 40.95 | 3.2 | 80 | 800 | 0.25 | 0.1 | 30 | +0.094 |
| 1N5260B | 40.85 | 43 | 45.15 | 3.0 | 93 | 900 | 0.25 | 0.1 | 33 | +0.095 |
| 1N5261B | 44.65 | 47 | 49.35 | 2.7 | 105 | 1000 | 0.25 | 0.1 | 36 | +0.095 |
| 1N5262B | 48.45 | 51 | 53.55 | 2.5 | 125 | 1100 | 0.25 | 0.1 | 39 | +0.096 |
| 1N5263B | 53.20 | 56 | 58.80 | 2.2 | 150 | 1300 | 0.25 | 0.1 | 43 | +0.096 |
| 1N5264B | 57.00 | 60 | 63.00 | 2.1 | 170 | 1400 | 0.25 | 0.1 | 46 | +0.097 |
| 1N5265B | 58.90 | 62 | 65.10 | 2.0 | 185 | 1400 | 0.25 | 0.1 | 47 | +0.097 |
| 1N5266B | 64.60 | 68 | 71.40 | 1.8 | 230 | 1600 | 0.25 | 0.1 | 52 | +0.097 |
| 1N5267B | 71.25 | 75 | 78.75 | 1.7 | 270 | 1700 | 0.25 | 0.1 | 56 | +0.098 |
| 1N5268B | 77.90 | 82 | 86.10 | 1.5 | 330 | 2000 | 0.25 | 0.1 | 62 | +0.098 |
| 1N5269B | 82.65 | 87 | 91.35 | 1.4 | 370 | 2200 | 0.25 | 0.1 | 68 | +0.099 |
| 1N5270B | 86.45 | 91 | 95.55 | 1.4 | 400 | 2300 | 0.25 | 0.1 | 69 | +0.099 |
| 1N5271B | 95.00 | 100 | 105.0 | 1.3 | 500 | 2600 | 0.25 | 0.1 | 76 | +0.110 |
| 1N5272B | 104.5 | 110 | 115.5 | 1.1 | 750 | 3000 | 0.25 | 0.1 | 84 | +0.110 |
| 1N5273B | 114.0 | 120 | 126.0 | 1.0 | 900 | 4000 | 0.25 | 0.1 | 91 | +0.110 |
| 1N5274B | 123.5 | 130 | 136.5 | 0.95 | 1100 | 4500 | 0.25 | 0.1 | 99 | +0.110 |
| 1N5275B | 133.0 | 140 | 147.0 | 0.90 | 1300 | 4500 | 0.25 | 0.1 | 106 | +0.110 |
| 1N5276B | 142.5 | 150 | 157.5 | 0.85 | 1500 | 5000 | 0.25 | 0.1 | 114 | +0.110 |
| 1N5277B | 152.0 | 160 | 168.0 | 0.80 | 1700 | 5500 | 0.25 | 0.1 | 122 | +0.110 |
| 1N5278B | 161.5 | 170 | 178.5 | 0.74 | 1900 | 5500 | 0.25 | 0.1 | 129 | +0.110 |

DO-35 CASE - MECHANICAL OUTLINE

| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.018 | 0.022 | 0.46 | 0.56 |
| B | 0.120 | 0.200 | 3.05 | 5.08 |
| C | 0.060 | 0.090 | 1.52 | 2.29 |
| D | 1.000 | - | 25.40 | - |

DO-35 (REV: R1)



R3 (11-September 2013)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centalsemi.com

Worldwide Field Representatives:
www.centalsemi.com/wwreps

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