

**CMPZ5221B THRU CMPZ5267B**

**SURFACE MOUNT  
SILICON ZENER DIODE  
350mW, 5% TOLERANCE**

**SOT-23 CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPZ5221B Series silicon zener diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications. Higher voltage devices are available on special order.

**MARKING CODE: SEE MARKING CODES ON  
ELECTRICAL CHARACTERISTICS TABLE**

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

Power Dissipation

Operating and Storage Junction Temperature

Note:  $V_Z$  Tolerance "B" suffix =  $\pm 5\%$ ,  $V_Z$  Tolerance "C" suffix =  $\pm 2\%$ ,  $V_Z$  Tolerance "D" suffix =  $\pm 1\%$ **SYMBOL** $P_D$  $T_J, T_{stg}$ 

350

-65 to +150

**UNITS**

mW

 $^{\circ}\text{C}$ **ELECTRICAL CHARACTERISTICS:** ( $T_A=25^{\circ}\text{C}$ )  $V_F=0.9\text{V MAX @ } I_F=10\text{mA}$  (for all types)

| TYPE      | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$ |     |       | TEST<br>CURRENT | MAXIMUM<br>ZENER IMPEDANCE |                   |      | MAXIMUM<br>REVERSE<br>CURRENT |     | MAX.<br>TEMP.<br>COEFF. | MARK.<br>CODE |
|-----------|---------------------------------|-----|-------|-----------------|----------------------------|-------------------|------|-------------------------------|-----|-------------------------|---------------|
|           | MIN                             | NOM | MAX   | $I_{ZT}$        | $Z_{ZT} @ I_{ZT}$          | $Z_{ZK} @ I_{ZK}$ |      | $I_R @ V_R$                   |     | $\theta V_Z$            |               |
|           | V                               | V   | V     | mA              | $\Omega$                   | $\Omega$          | mA   | $\mu\text{A}$                 | V   | %/ $^{\circ}\text{C}$   |               |
| CMPZ5221B | 2.280                           | 2.4 | 2.520 | 20              | 30                         | 1200              | 0.25 | 100                           | 1.0 | -0.085                  | 18A           |
| CMPZ5222B | 2.375                           | 2.5 | 2.625 | 20              | 30                         | 1250              | 0.25 | 100                           | 1.0 | -0.085                  | 18B           |
| CMPZ5223B | 2.565                           | 2.7 | 2.835 | 20              | 30                         | 1300              | 0.25 | 75                            | 1.0 | -0.080                  | 18C           |
| CMPZ5224B | 2.660                           | 2.8 | 2.940 | 20              | 30                         | 1400              | 0.25 | 75                            | 1.0 | -0.080                  | 18D           |
| CMPZ5225B | 2.850                           | 3.0 | 3.150 | 20              | 29                         | 1600              | 0.25 | 50                            | 1.0 | -0.075                  | 18E           |
| CMPZ5226B | 3.135                           | 3.3 | 3.465 | 20              | 28                         | 1600              | 0.25 | 25                            | 1.0 | -0.070                  | C8A           |
| CMPZ5227B | 3.420                           | 3.6 | 3.780 | 20              | 24                         | 1700              | 0.25 | 15                            | 1.0 | -0.065                  | C8B           |
| CMPZ5228B | 3.705                           | 3.9 | 4.095 | 20              | 23                         | 1900              | 0.25 | 10                            | 1.0 | -0.060                  | C8C           |
| CMPZ5229B | 4.085                           | 4.3 | 4.515 | 20              | 22                         | 2000              | 0.25 | 5.0                           | 1.0 | $\pm 0.055$             | C8D           |
| CMPZ5230B | 4.465                           | 4.7 | 4.935 | 20              | 19                         | 1900              | 0.25 | 5.0                           | 2.0 | $\pm 0.030$             | C8E           |
| CMPZ5231B | 4.845                           | 5.1 | 5.335 | 20              | 17                         | 1600              | 0.25 | 5.0                           | 2.0 | $\pm 0.030$             | C8F           |
| CMPZ5232B | 5.320                           | 5.6 | 5.880 | 20              | 11                         | 1600              | 0.25 | 5.0                           | 3.0 | +0.038                  | C8G           |
| CMPZ5233B | 5.700                           | 6.0 | 6.300 | 20              | 7.0                        | 1600              | 0.25 | 5.0                           | 3.5 | +0.038                  | C8H           |
| CMPZ5234B | 5.890                           | 6.2 | 6.510 | 20              | 7.0                        | 1000              | 0.25 | 5.0                           | 4.0 | +0.045                  | C8J           |
| CMPZ5235B | 6.460                           | 6.8 | 7.140 | 20              | 5.0                        | 750               | 0.25 | 3.0                           | 5.0 | +0.050                  | C8K           |
| CMPZ5236B | 7.125                           | 7.5 | 7.875 | 20              | 6.0                        | 500               | 0.25 | 3.0                           | 6.0 | +0.058                  | C8L           |
| CMPZ5237B | 7.790                           | 8.2 | 8.610 | 20              | 8.0                        | 500               | 0.25 | 3.0                           | 6.5 | +0.062                  | C8M           |
| CMPZ5238B | 8.265                           | 8.7 | 9.135 | 20              | 8.0                        | 600               | 0.25 | 3.0                           | 6.5 | +0.065                  | C8N           |
| CMPZ5239B | 8.645                           | 9.1 | 9.555 | 20              | 10                         | 600               | 0.25 | 3.0                           | 7.0 | +0.068                  | C8P           |
| CMPZ5240B | 9.500                           | 10  | 10.50 | 20              | 17                         | 600               | 0.25 | 3.0                           | 8.0 | +0.075                  | C8Q           |
| CMPZ5241B | 10.45                           | 11  | 11.55 | 20              | 22                         | 600               | 0.25 | 2.0                           | 8.4 | +0.076                  | C8R           |
| CMPZ5242B | 11.40                           | 12  | 12.60 | 20              | 30                         | 600               | 0.25 | 1.0                           | 9.1 | +0.077                  | C8S           |
| CMPZ5243B | 12.35                           | 13  | 13.65 | 9.5             | 13                         | 600               | 0.25 | 0.5                           | 9.9 | +0.079                  | C8T           |
| CMPZ5244B | 13.30                           | 14  | 14.70 | 9.0             | 15                         | 600               | 0.25 | 0.1                           | 10  | +0.082                  | C8U           |

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# CMPZ5221B THRU CMPZ5267B

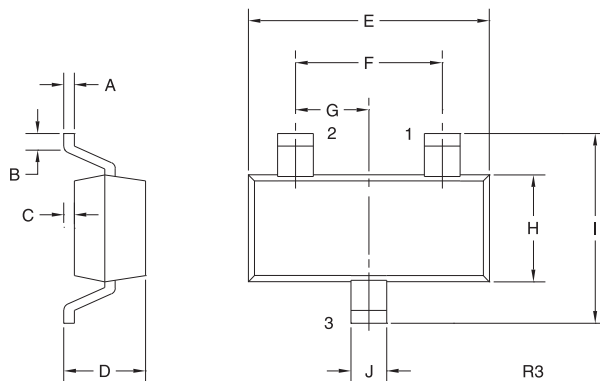
## SURFACE MOUNT SILICON ZENER DIODE 350mW, 5% TOLERANCE



**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$ )  $V_F=0.9\text{V MAX @ } I_F=10\text{mA}$  (for all types)

| TYPE      | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$ |     |       | TEST<br>CURRENT<br>$I_{ZT}$ | MAXIMUM<br>ZENER IMPEDANCE |                   |      | MAXIMUM<br>REVERSE<br>CURRENT |    | MAX.<br>TEMP.<br>COEFF.<br>$\Theta V_Z$ | MARK.<br>CODE |
|-----------|---------------------------------|-----|-------|-----------------------------|----------------------------|-------------------|------|-------------------------------|----|-----------------------------------------|---------------|
|           | MIN                             | NOM | MAX   |                             | $Z_{ZT} @ I_{ZT}$          | $Z_{ZT} @ I_{ZK}$ |      | $I_R @ V_R$                   |    |                                         |               |
|           | V                               | V   | V     |                             | $\Omega$                   | $\Omega$          | mA   | $\mu\text{A}$                 | V  | % / $^{\circ}\text{C}$                  |               |
| CMPZ5245B | 14.25                           | 15  | 15.75 | 8.5                         | 16                         | 600               | 0.25 | 0.1                           | 11 | +0.082                                  | C8V           |
| CMPZ5246B | 15.20                           | 16  | 16.80 | 7.8                         | 17                         | 600               | 0.25 | 0.1                           | 12 | +0.083                                  | C8W           |
| CMPZ5247B | 16.15                           | 17  | 17.85 | 7.4                         | 19                         | 600               | 0.25 | 0.1                           | 13 | +0.084                                  | C8X           |
| CMPZ5248B | 17.10                           | 18  | 18.90 | 7.0                         | 21                         | 600               | 0.25 | 0.1                           | 14 | +0.085                                  | C8Y           |
| CMPZ5249B | 18.05                           | 19  | 19.95 | 6.6                         | 23                         | 600               | 0.25 | 0.1                           | 14 | +0.086                                  | C8Z           |
| CMPZ5250B | 19.00                           | 20  | 21.00 | 6.2                         | 25                         | 600               | 0.25 | 0.1                           | 15 | +0.086                                  | 81A           |
| CMPZ5251B | 20.90                           | 22  | 23.10 | 5.6                         | 29                         | 600               | 0.25 | 0.1                           | 17 | +0.087                                  | 81B           |
| CMPZ5252B | 22.80                           | 24  | 25.20 | 5.2                         | 33                         | 600               | 0.25 | 0.1                           | 18 | +0.088                                  | 81C           |
| CMPZ5253B | 23.75                           | 25  | 26.25 | 5.0                         | 35                         | 600               | 0.25 | 0.1                           | 19 | +0.089                                  | 81D           |
| CMPZ5254B | 25.65                           | 27  | 28.35 | 4.6                         | 41                         | 600               | 0.25 | 0.1                           | 21 | +0.090                                  | 81E           |
| CMPZ5255B | 26.60                           | 28  | 29.40 | 4.5                         | 44                         | 600               | 0.25 | 0.1                           | 21 | +0.091                                  | 81F           |
| CMPZ5256B | 28.50                           | 30  | 31.50 | 4.2                         | 49                         | 600               | 0.25 | 0.1                           | 23 | +0.091                                  | 81G           |
| CMPZ5257B | 31.35                           | 33  | 34.65 | 3.8                         | 58                         | 700               | 0.25 | 0.1                           | 25 | +0.092                                  | 81H           |
| CMPZ5258B | 34.20                           | 36  | 37.80 | 3.4                         | 70                         | 700               | 0.25 | 0.1                           | 27 | +0.093                                  | 81J           |
| CMPZ5259B | 37.05                           | 39  | 40.95 | 3.2                         | 80                         | 800               | 0.25 | 0.1                           | 30 | +0.094                                  | 81K           |
| CMPZ5260B | 40.85                           | 43  | 45.15 | 3.0                         | 93                         | 900               | 0.25 | 0.1                           | 33 | +0.095                                  | 81L           |
| CMPZ5261B | 44.65                           | 47  | 49.35 | 2.7                         | 105                        | 1000              | 0.25 | 0.1                           | 36 | +0.095                                  | 81M           |
| CMPZ5262B | 48.45                           | 51  | 53.55 | 2.5                         | 125                        | 1100              | 0.25 | 0.1                           | 39 | +0.096                                  | 81N           |
| CMPZ5263B | 53.20                           | 56  | 58.80 | 2.2                         | 150                        | 1300              | 0.25 | 0.1                           | 43 | +0.096                                  | 81P           |
| CMPZ5264B | 57.00                           | 60  | 63.00 | 2.1                         | 170                        | 1400              | 0.25 | 0.1                           | 46 | +0.097                                  | 81Q           |
| CMPZ5265B | 58.90                           | 62  | 65.10 | 2.0                         | 185                        | 1400              | 0.25 | 0.1                           | 47 | +0.097                                  | 81R           |
| CMPZ5266B | 64.60                           | 68  | 71.40 | 1.8                         | 230                        | 1600              | 0.25 | 0.1                           | 52 | +0.097                                  | 81S           |
| CMPZ5267B | 71.25                           | 75  | 78.75 | 1.7                         | 270                        | 1700              | 0.25 | 0.1                           | 56 | +0.098                                  | 81T           |

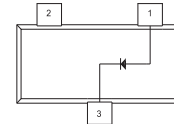
### SOT-23 CASE - MECHANICAL OUTLINE



| SYMBOL | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | MIN    | MAX   | MIN         | MAX  |
| A      | 0.003  | 0.007 | 0.08        | 0.18 |
| B      | 0.006  | -     | 0.15        | -    |
| C      | -      | 0.005 | -           | 0.13 |
| D      | 0.035  | 0.043 | 0.89        | 1.09 |
| E      | 0.110  | 0.120 | 2.80        | 3.05 |
| F      | 0.075  | -     | 1.90        | -    |
| G      | 0.037  | -     | 0.95        | -    |
| H      | 0.047  | 0.055 | 1.19        | 1.40 |
| I      | 0.083  | 0.098 | 2.10        | 2.49 |
| J      | 0.014  | 0.020 | 0.35        | 0.50 |

SOT-23 (REV: R3)

**LEAD CODE:**  
1) Anode  
2) No Connection  
3) Cathode



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## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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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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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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

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