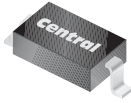


CMHZ5221B THRU CMHZ5267B

**SURFACE MOUNT  
SILICON ZENER DIODE  
2.4 VOLTS THRU 75 VOLTS  
500mW, 5% TOLERANCE**



SOD-123 CASE



www.centralemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMHZ5221B Series Silicon Zener Diode is a high quality voltage regulator, manufactured in a surface mount package, designed for use in industrial, commercial, entertainment and computer applications.

**MARKING CODE: SEE MARKING CODE ON ELECTRICAL CHARACTERISTIC TABLE**

**MAXIMUM RATINGS:**

Power Dissipation (@ $T_L=75^\circ\text{C}$ )  
Maximum Operating Junction Temperature  
Storage Temperature  
Thermal Resistance

**SYMBOL**

$P_D$  500  
 $T_J$  +150  
 $T_{stg}$  -65 to +175  
 $\theta_{JL}$  150

**UNIT**

mW  
 $^\circ\text{C}$   
 $^\circ\text{C}$   
 $^\circ\text{C/W}$

**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 CURRENT<br>$I_{ZT}$<br>mA | MAXIMUM ZENER IMPEDANCE       |                               |                              | MAXIMUM REVERSE CURRENT |     | MAX. TEMP. COEFF.<br>$\theta_{VZ}$<br>%/°C | MARKING CODE |
|-----------|---------------------------------|----------|----------|--------------------------------|-------------------------------|-------------------------------|------------------------------|-------------------------|-----|--|--------------|
|           | MIN<br>V                        | NOM<br>V | MAX<br>V |                                | $Z_{ZT} @ I_{ZT}$<br>$\Omega$ | $Z_{ZK} @ I_{ZK}$<br>$\Omega$ | $I_R @ V_R$<br>$\mu\text{A}$ | $V_R$<br>V              |     |  |              |
|           |                                 |          |          |                                |                               |                               |                              |                         |     |  |              |
| CMHZ5221B | 2.280                           | 2.4      | 2.520    | 20                             | 30                            | 1200                          | 0.25                         | 100                     | 1.0 | -0.085                                     | CC1          |
| CMHZ5222B | 2.375                           | 2.5      | 2.625    | 20                             | 30                            | 1250                          | 0.25                         | 100                     | 1.0 | -0.085                                     | CC2          |
| CMHZ5223B | 2.565                           | 2.7      | 2.835    | 20                             | 30                            | 1300                          | 0.25                         | 75                      | 1.0 | -0.080                                     | CC3          |
| CMHZ5224B | 2.660                           | 2.8      | 2.940    | 20                             | 30                            | 1400                          | 0.25                         | 75                      | 1.0 | -0.080                                     | CC4          |
| CMHZ5225B | 2.850                           | 3.0      | 3.150    | 20                             | 30                            | 1600                          | 0.25                         | 50                      | 1.0 | -0.075                                     | CC5          |
| CMHZ5226B | 3.135                           | 3.3      | 3.465    | 20                             | 28                            | 1600                          | 0.25                         | 25                      | 1.0 | -0.070                                     | CD1          |
| CMHZ5227B | 3.420                           | 3.6      | 3.780    | 20                             | 24                            | 1700                          | 0.25                         | 15                      | 1.0 | -0.065                                     | CD2          |
| CMHZ5228B | 3.705                           | 3.9      | 4.095    | 20                             | 23                            | 1900                          | 0.25                         | 10                      | 1.0 | -0.060                                     | CD3          |
| CMHZ5229B | 4.085                           | 4.3      | 4.515    | 20                             | 22                            | 2000                          | 0.25                         | 5.0                     | 1.0 | $\pm 0.055$                                | CD4          |
| CMHZ5230B | 4.465                           | 4.7      | 4.935    | 20                             | 19                            | 1900                          | 0.25                         | 5.0                     | 2.0 | $\pm 0.030$                                | CD5          |
| CMHZ5231B | 4.845                           | 5.1      | 5.355    | 20                             | 17                            | 1600                          | 0.25                         | 5.0                     | 2.0 | $\pm 0.030$                                | CE1          |
| CMHZ5232B | 5.320                           | 5.6      | 5.880    | 20                             | 11                            | 1600                          | 0.25                         | 5.0                     | 3.0 | +0.038                                     | CE2          |
| CMHZ5233B | 5.700                           | 6.0      | 6.300    | 20                             | 7.0                           | 1600                          | 0.25                         | 5.0                     | 3.5 | +0.038                                     | CE3          |
| CMHZ5234B | 5.890                           | 6.2      | 6.510    | 20                             | 7.0                           | 1000                          | 0.25                         | 5.0                     | 4.0 | +0.045                                     | CE4          |
| CMHZ5235B | 6.460                           | 6.8      | 7.140    | 20                             | 5.0                           | 750                           | 0.25                         | 3.0                     | 5.0 | +0.050                                     | CE5          |
| CMHZ5236B | 7.125                           | 7.5      | 7.875    | 20                             | 6.0                           | 500                           | 0.25                         | 3.0                     | 6.0 | +0.058                                     | CF1          |
| CMHZ5237B | 7.790                           | 8.2      | 8.610    | 20                             | 8.0                           | 500                           | 0.25                         | 3.0                     | 6.5 | +0.062                                     | CF2          |
| CMHZ5238B | 8.265                           | 8.7      | 9.135    | 20                             | 8.0                           | 600                           | 0.25                         | 3.0                     | 6.5 | +0.065                                     | CF3          |
| CMHZ5239B | 8.645                           | 9.1      | 9.555    | 20                             | 10                            | 600                           | 0.25                         | 3.0                     | 7.0 | +0.068                                     | CF4          |
| CMHZ5240B | 9.500                           | 10       | 10.50    | 20                             | 17                            | 600                           | 0.25                         | 3.0                     | 8.0 | +0.075                                     | CF5          |
| CMHZ5241B | 10.45                           | 11       | 11.55    | 20                             | 22                            | 600                           | 0.25                         | 2.0                     | 8.4 | +0.076                                     | CH1          |
| CMHZ5242B | 11.40                           | 12       | 12.60    | 20                             | 30                            | 600                           | 0.25                         | 1.0                     | 9.1 | +0.077                                     | CH2          |
| CMHZ5243B | 12.35                           | 13       | 13.65    | 9.5                            | 13                            | 600                           | 0.25                         | 0.5                     | 9.9 | +0.079                                     | CH3          |
| CMHZ5244B | 13.30                           | 14       | 14.70    | 9.0                            | 15                            | 600                           | 0.25                         | 0.1                     | 10  | +0.082                                     | CH4          |
| CMHZ5245B | 14.25                           | 15       | 15.75    | 8.5                            | 16                            | 600                           | 0.25                         | 0.1                     | 11  | +0.082                                     | CH5          |
| CMHZ5246B | 15.20                           | 16       | 16.80    | 7.8                            | 17                            | 600                           | 0.25                         | 0.1                     | 12  | +0.083                                     | CJ1          |
| CMHZ5247B | 16.15                           | 17       | 17.85    | 7.4                            | 19                            | 600                           | 0.25                         | 0.1                     | 13  | +0.084                                     | CJ2          |
| CMHZ5248B | 17.10                           | 18       | 18.90    | 7.0                            | 21                            | 600                           | 0.25                         | 0.1                     | 14  | +0.085                                     | CJ3          |
| CMHZ5249B | 18.05                           | 19       | 19.95    | 6.6                            | 23                            | 600                           | 0.25                         | 0.1                     | 14  | +0.086                                     | CJ4          |
| CMHZ5250B | 19.00                           | 20       | 21.00    | 6.2                            | 25                            | 600                           | 0.25                         | 0.1                     | 15  | +0.086                                     | CJ5          |
| CMHZ5251B | 20.90                           | 22       | 23.10    | 5.6                            | 29                            | 600                           | 0.25                         | 0.1                     | 17  | +0.087                                     | CK1          |
| CMHZ5252B | 22.80                           | 24       | 25.20    | 5.2                            | 33                            | 600                           | 0.25                         | 0.1                     | 18  | +0.087                                     | CK2          |
| CMHZ5253B | 23.75                           | 25       | 26.25    | 5.0                            | 35                            | 600                           | 0.25                         | 0.1                     | 19  | +0.089                                     | CK3          |

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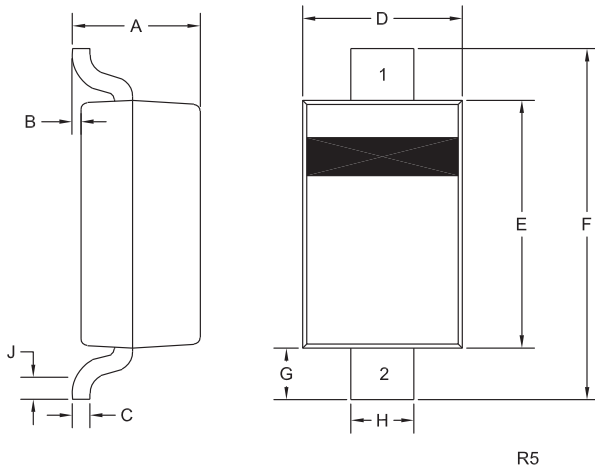


**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$ ),  $V_F=0.9\text{V MAX @ } I_F=10\text{mA}$  (for all types)

| TYPE      | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$ |     |       | TEST CURRENT | MAXIMUM ZENER IMPEDANCE |                   |               | MAXIMUM REVERSE CURRENT |    | MAX. TEMP. COEFF. | MARKING 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           | $\Omega$                | $\Omega$          | $\mu\text{A}$ | %/°C                    |    |                   |              |
| CMHZ5254B | 25.65                           | 27  | 28.35 | 4.6          | 41                      | 600               | 0.25          | 0.1                     | 21 | +0.090            | CK4          |
| CMHZ5255B | 26.60                           | 28  | 29.40 | 4.5          | 44                      | 600               | 0.25          | 0.1                     | 21 | +0.091            | CK5          |
| CMHZ5256B | 28.50                           | 30  | 31.50 | 4.2          | 49                      | 600               | 0.25          | 0.1                     | 23 | +0.091            | CM1          |
| CMHZ5257B | 31.35                           | 33  | 34.65 | 3.8          | 58                      | 700               | 0.25          | 0.1                     | 25 | +0.092            | CM2          |
| CMHZ5258B | 34.20                           | 36  | 37.80 | 3.4          | 70                      | 700               | 0.25          | 0.1                     | 27 | +0.093            | CM3          |
| CMHZ5259B | 37.05                           | 39  | 40.95 | 3.2          | 80                      | 800               | 0.25          | 0.1                     | 30 | +0.094            | CM4          |
| CMHZ5260B | 40.85                           | 43  | 45.15 | 3.0          | 93                      | 900               | 0.25          | 0.1                     | 33 | +0.095            | CM5          |
| CMHZ5261B | 44.65                           | 47  | 49.35 | 2.7          | 105                     | 1000              | 0.25          | 0.1                     | 36 | +0.095            | CN1          |
| CMHZ5262B | 48.45                           | 51  | 53.55 | 2.5          | 125                     | 1100              | 0.25          | 0.1                     | 39 | +0.096            | CN2          |
| CMHZ5263B | 53.20                           | 56  | 58.80 | 2.2          | 150                     | 1300              | 0.25          | 0.1                     | 43 | +0.096            | CN3          |
| CMHZ5264B | 57.00                           | 60  | 63.00 | 2.1          | 170                     | 1400              | 0.25          | 0.1                     | 46 | +0.097            | CN4          |
| CMHZ5265B | 58.90                           | 62  | 65.10 | 2.0          | 185                     | 1400              | 0.25          | 0.1                     | 47 | +0.097            | CN5          |
| CMHZ5266B | 64.60                           | 68  | 71.40 | 1.8          | 230                     | 1600              | 0.25          | 0.1                     | 52 | +0.097            | CP1          |
| CMHZ5267B | 71.25                           | 75  | 78.75 | 1.7          | 270                     | 1700              | 0.25          | 0.1                     | 56 | +0.098            | CP2          |

Higher Zener voltages may be available upon request. Please consult factory.

**SOD-123 CASE - MECHANICAL OUTLINE**



| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | INCHES     |       | MILLIMETERS |      |
|        | MIN        | MAX   | MIN         | MAX  |
| A      | 0.037      | 0.053 | 0.95        | 1.35 |
| B      | 0.000      | 0.005 | 0.00        | 0.12 |
| C      | -          | 0.008 | -           | 0.20 |
| D      | 0.055      | 0.071 | 1.40        | 1.80 |
| E      | 0.098      | 0.110 | 2.50        | 2.80 |
| F      | 0.142      | 0.154 | 3.60        | 3.90 |
| G      | 0.016      | -     | 0.40        | -    |
| H      | 0.020      | 0.028 | 0.50        | 0.70 |
| J      | 0.010      | -     | 0.25        | -    |

SOD-123 (REV:R5)

**LEAD CODE:**

- 1) Cathode
- 2) Anode

R9 (12-August 2010)

## 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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